

HIT-NOT Proximity System

DDAC Cab Silencer

User's Manual v1.0



FREDERICK ENERGY PRODUCTS, LLC 1769 Jeff Road

US7,420,471; US8,169,335; US8,232,888; US5,939,986; US6,810,353; US8,446,277; US8,552,882; US8,710,979; US8,810,390; US8,847,780; US9,081,046; US9,153,118; AU2005289704; AU2008316786; AU2009228472; AU2010241545; AU2013315672; ZA2007/02919; ZA2008/02673; ZA2010/06816, ZA2010/09068; ZA2011/07178 Patent Pending

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1 Overview

The Cab Silencer is part of a complete HIT-NOT Proximity Detection system from Frederick Energy Products which provides audible and visual warnings to both individuals and to vehicle operators to alert them that the individual has entered too close to an operating piece of equipment and is in a dangerous situation. The Cab Silencer attaches directly to a vehicle or piece of machinery to silence the Personal Alarm Device (PAD) of the operator of the industrial equipment.

1.1 Theory of Operation

The function of the Cab Silencer is:

 To transmit a 73 kHz magnetic field around a small portion in the vehicle or piece of machinery to act as a silent zone for the operator while conducting work on the industrial equipment.

The Cab Silencer has an internal 73 kHz transmitter comprised of an inductor that creates a magnetic field with a specific pattern to serve as a small silent zone in the vehicle or machine. When a Personal Alarm Device (PAD) is within 21 inches of the Cab Silencer, the PAD will detect the 73 kHz magnetic field from the Cab Silencer and analyze its field strength. When a PAD is in the marker field of the Cab Silencer, the PAD will not respond to generators pings. The Cab Silencer needs to be located within a 21" radius to an operator's PAD and about 4 feet away from the Generator. Preferably, place the cab silencer on the back of the seat or under the arm rest on the right side.

1.2 Operating Frequency

The Cab Silencer will transmit on a frequency of 73 kHz.

1.3 Label Information

The Cab Silencer label, shown below, is located around the housing.



ZA2010/06816, ZA2010/09068; ZA2011/07178 Patent Pending

The HIT-NOT label defines the model and serial number of the Cab Silencer but is too small to contain the FCC/IC information required. The information can be found below in this User's Manual.

1.4 FCC/IC Information

The FCC ID for the Cab Silencer is **QUI-DDAC-CBS** and complies with Part 15 of the FCC Rules. Operation is subject to the following conditions:

- 1. This device may not cause harmful interference.
- 2. This device must accept any interference received including interference that may cause undesired operation.

Any intentional or unintentional changes or modifications to the configuration of the Cab Silencer not expressly approved by Frederick Energy Products LLC could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for 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 not 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 to correct the interference by one or more of the following measures:

- --Reorient or relocate the receiving antenna.
- --Increase the separation between the equipment and receiver.
- --Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- --Consult the dealer or an experienced radio/technician for help.

Conformité aux normes FCC Cet équipement a été testé trouvé conforme aux limites pour un dispositif numérique de classe B, conformément à la Partie 15 des règlements de la FCC. Ces limites sont conçues pour fournir une protection raisonnable contre les interférences nuisibles dans une installation résidentielle.

Cet équipement génère, utilise et peut émettre des fréquences radio et, s'il n'est pas installé et utilisé conformément ment aux instructions du fabricant, peut causer des interférences nuisibles aux communications radio.

Rien ne garantit cependant que l'interférences ne se produira pas dans une installation particulière. Si cet équipement provoque des interférences nuisibles à la réception radio ou de télévision, qui peut être déterminé en comparant et en l'éteignant, l'utilisateur est encouragé à essayer de corriger les interférence par une ou plusieurs des mesures suivantes:

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- --Réorienter ou déplacer l'antenne de réception.
- --Augmenter la distance entre l'équipement et le récepteur.
- --Branchez l'appareil dans une prise sur un circuit différent de celui auquel le récepteur est connecté.
- --Consulter le vendeur ou un technicien radio / expérimenté.

Les changements ou modififications à cet appareil sans expressément approuvée par la partie responsable de conformité pourraient annuler l'autorité de l'utilisateur de faire fonctionner cet équipement.

The required notices are specified in the RSS documents (including RSS-Gen) applicable to the equipment model. These notices are required to be shown in a conspicuous location in the user manual for the equipment, or to be displayed on the equipment model. If more than one notice is required, the equipment model(s) to which each notice pertains should be identified. Suppliers of radio apparatus shall provide notices and user information in both English and French.

This device complies with Industry Canada license-exempt RSS-standards(s). Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil est conforme avecx Industrie Canada exempt de licence Rss standard(s). Son fonctionnement est soumis aux deux conditions suivantes:

- (1) cet appareil ne peut causer d'interférence, et
- (2) cet appareil doit accepter toute interférence, y compris des interférences qui peuvent provoquer un fonctionnement indésirable du périphérique.

The Cab Silencer also complies with Industry Canada (IC) under Category II radio apparatus with RSS-210:

HIT-NOT® Cab Silencer

Model: **DDAC-CAB-SI**IC ID: **11625A-DDACCBS**

2 Operation

2.1 Installation Information

The Cab Silencer is mounted in the cab of a piece of machinery, on the back of the operator's seat or under the right arm rest. The purpose of the Cab Silencer is to quiet the Operator's PAD while driving the equipment. The Cab Silencer must be within a 21" radius of the Operator's PAD <u>AND</u> 4 feet away from the Magnetic Field Generator. The Generator has an optional add-on Module, Collision Avoidance Module (CAM), which may be silenced by the Cab Silencer if they are less than 4 feet apart. Installation on the machine needs to be on a 12V source, downstream from the ignition. An LED light in the end cap of the Cab Silencer will indicate that the device has power. After installing the Magnetic Field Generator system and the CAB Silencer on the machine, performance of the unit should be verified by operation and test.

2.1.1 Inoperability Warning

The Cab Silencer may blind the optional add-on Collision Avoidance Module (CAM) when in *very* close proximity. A safe guideline is to keep the Cab Silencer *at least 4 ft (1.2 m)* away from the CAM installed in the Magnetic Field Generator. The purpose of the CAM is to sense the magnetic field from a Generator on another piece of equipment. If the Cab Silencer is closer than 4 ft (1.2 m) from the CAM, it may cause the CAM to be blinded and unable to sense another vehicle's 73 kHz signal. A collision between vehicles would be possible.

2.2 Charging

The Cab Silencer is directly powered when the ignition of the vehicle is turned on and requires no charging.

2.3 Alerts

Cab Silencers are designed to accommodate high input voltage up to about 16V and maintain the original silencing zone size. If the truck supply voltage changes or changes occur resulting in a reduction of zone sizes, the system will accommodate voltage range 11.8 to 16 V and ensure that the zones remain where they were initially set.

If a pedestrian with a PAD approaches equipment with a Magnetic Field Generator system, their PAD could be silenced if they are within the 21" radius of the Cab Silencer. A danger presents itself when the driver engages the equipment while the pedestrian is within the 21" radius. The pedestrian is in danger of being hit by the equipment if their PAD is too close the Cab Silencer. The operator needs to turn off the truck while anyone is in place next to the equipment and restart only after the person moves away. It is required that after installation, the silencing field outside the vehicle must be at a very minimum that will not endanger someone. A PAD outside the vehicle should not be silenced. You may need to move the cab silencer to a more convenient location or adjust the pot near the LED for a smaller field.

2.4 **Maintenance**

The Cab Silencer should be regularly cleaned to reduce buildup of dust and dirt. The user should check to see if the light in the end cap is working before using the device.

2.5 **Adjustments**

Field size is an adjustment which is made on the Cab Silencer. To make the adjustment, unscrew the end cap. To adjust the field size, turn the screw located on the PWM pot with a small slotted screwdriver. Turning in a clockwise direction will increase the silencing zone, while turning counterclockwise will decrease the field. The factory setting is at 21" as measured on the side (maximum is 25"). Adjustments must be made by a professional.

2.6 Interferences

The Cab Silencer may interfere with a Generator with an installed CAM. If the Magnetic Field Generator and the Cab Silencer are less than 4 ft apart, the detection by the CAM may be degraded, reducing its effectiveness in detecting Generator pings emanating from another vehicle.

Cab Silencer Specifications

Part Number: DDAC-CAB-SI

Size: 1 1/4" diameter x 8" length/ 3.175 cm x 20.32 cm

Weight: 0.35 lbs./ 0.159 kg

Input Voltage: 12 VDC

Magnetic Field Frequency: 73 kHz AC field.

Magnetic Field Strength: negligible

Maximum Current Draw: Less than 5A. Average current less than 0.3A

Transmitter Frequency: 73 kHz

Operating Temperature Range: -30°C to +55°C; -22°F to 131°F

Shipping Considerations: None



DDAC MFG System Installation Guide



Install the Generator on top of the overhead guard and at least 4" from the frame. It should be as far from the strobe light as possible. Use the U-Bolts to secure the Generator to the overhead

Warning Module Connections

exiting the warning module with the bare wires goes to the machine for power

Step

The cable



The cable exiting the warning module with the connector goes to the Generator

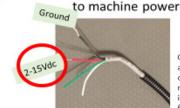
Step

Install Warning Module

Place magnet side of the Warning Module to the frame of the forklift where it can be seen and heard by the operator.
An optional Auxiliary Light (Light

Only Warning Module) can be connected to the Generator to provide an additional visual alert,

Making the connection



Current:0.5A Peak Surge Current: 15A

Connect only Red and Black wires, other wires have reserved interface

Connect to a switched and fused (5A-10A) circuit.

Making the Connection to the Generator



Connect Warning Module (Plug) to Generator (Recepticle).

Cab Silencer

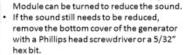


In order to avoid battery drain while the vehicle is off, connect Cab Silencer to a switched and fused (5A) circuit. Place the Cab Silencer within 21" of the Operator's PAD AND 4ft away from the generator. The Cab Silencer may interfere with the CAM if installed on the overhead guard.



Volume Adjust





Turn on the truck and activate the PAD

- · Adjust the "VOL" pot with a 3/32" slotted screwdriver. Slowly turn the VOL pot counterclockwise to decrease the volume Do NOT turn beyond the "STOP".
- Return the bottom cover if Volume is correct.



 ∞

Silent Zone Adjust

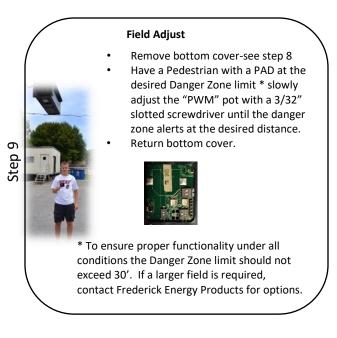
- Factory set to "21 in.
- To decrease the size, unscrew the cap from the Cab Silencer.
- Activate a PAD and turn on truck.
- Using a 3/32" slotted screwdriver, turn the Pot until the PAD silences at the desired location.
- Replace cap.
- Ensure the Silent Zone does not extend outside of the vehicle

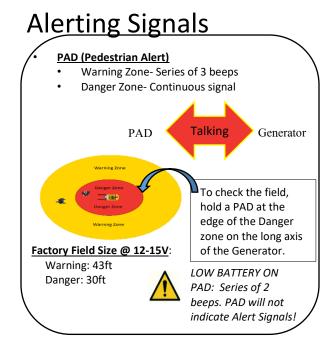


All adjustments in Steps 7-9 need to be done by a professional.

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2.9 Safety Consideration

The driver and pedestrian should not be in close proximity while the truck is in gear. The driver must turn off the truck while a pedestrian is standing next to the truck. An alternate solution is a switch applied to the emergency brake to cut the circuit to the generator while the brake is activated.

3 Warranty

HIT-NOT® WARRANTY TERMS AND CONDITIONS

IMPORTANT-READ CAREFULLY: BY AND INSTALLING AND USING THE HIT-NOT® SYSTEM, YOU ACKNOWLEDGE AND AGREE TO BE CONTRACTUALLY BOUND BY THESE WARRANTY TERMS AND CONDITIONS. IF ANY OF THE TERMS OF USE ARE NOT ACCEPTABLE TO YOU, DO NOT INSTALL OR USE THE HIT-NOT® SYSTEM.

THE HIT-NOT SYSTEM IS SIMPLY A TOOL TO BE USED TO ASSIST YOU IN SAFELY OPERATING HEAVY EQUIPMENT. THE HIT-NOT SYSTEM IS NOT INTENDED AS A SUBSTITUTE FOR, NOR DOES IT REPLACE, SAFE PRACTICES IN OPERATING HEAVY EQUIPMENT. YOUR USE OF THE HIT-NOT SYSTEM IS SOLELY AT YOUR OWN INDEPENDENT DISCRETION AND RISK.

ACCEPTANCE AND DEFINITIONS.

- (A) Acceptance of Terms. These Warranty Terms and Conditions (these "Terms") are a legal agreement between You, as a purchaser and end user of the System and Frederick Energy Products, LLC. By installing the System or using the System in any way, You are (1) agreeing to be bound by these Terms. If You do not agree with all these terms, do not use OR INSTALL the SYSTEM. YOU MUST RETURN THE SYSTEM TO THE DEALER FROM WHICH YOU PURCHASED THE SYSTEM, IN ACCORDANCE WITH THE DEALER'S POLICIES. This Agreement constitutes the entire and only agreement between FEP and You and supersedes all prior or contemporaneous agreements, representations, warranties and understandings with respect to the System, and the subject matter of this Agreement.
- **(B) Definitions.** In this Agreement, "You" and "Your" refer to You as the user of the System. "FEP" "we," "us" and "our" refer to Frederick Energy Products, LLC and our successors, partners, affiliates, subsidiaries and assigns. "System" refers to the Hit-Not® System purchased by You. "Terms" refers, collectively, to these Warranty Terms and Conditions.

LIMITED WARRANTIES; DISCLAIMER.

- (A) Limited Warranty. FEP hereby warrants against: (1) defects in the System, either in workmanship or material, and (2) the failure of the System to conform to FEP's written specifications, for a period of one (1) year after date of delivery to You, in each case; provided that such System has been under proper and normal use at all times during such period. All warranty claims under these Terms must be submitted through the Dealer from which you purchased the System. FEP's liability is restricted to the replacement or repair of the defective or nonconforming parts alone and does not include any installation, labor, or expense involved, or other contingent liability. Liability for any components manufactured by third parties but incorporated into FEP Products to be furnished by FEP, shall be limited to the guarantee or liability to FEP of the manufacturer or supplier of such components. FEP is not liable for damages resulting from the use or misuse of the FEP Products.
- (B) Disclaimers. EXCEPT AS EXPRESSLY SET FORTH ABOVE: (1) NO ADVICE OR INFORMATION, WHETHER ORAL OR WRITTEN, PROVIDED BY OR THROUGH FEP, ANY DEALER OR DISTRIBUTOR, OR ANY THIRD PARTY SHALL IMPLY THE CREATION OF ANY REPRESENTATION OR WARRANTY OF ANY KIND WHATSOEVER BY FEP; (2) THE SYSTEM IS PROVIDED "AS IS" AND WITHOUT ANY WARRANTY OF ANY KIND, EITHER EXPRESS, STATUTORY OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE; (3) FEP DOES NOT REPRESENT OR WARRANT THAT THE SYSTEM WILL BE FUNCTIONAL OR DEFECT-FREE, OR THAT DEFECTS WILL BE CORRECTED; AND (4) FEP HEREBY DISCLAIMS ANY AND ALL LIABILITY OR RESPONSIBILITY FOR THE IMPROPER USE OF THE SYSTEM OR FOR THE INCORRECT OR IMPROPER INSTALLATION OF THE SYSTEM. SOME STATES OR OTHER JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES, SO THE ABOVE EXCLUSIONS MAY NOT APPLY TO YOU. UNDER NO CIRCUMSTANCES WILL FEP BE LIABLE FOR ANY LOSS OR DAMAGE CAUSED BY YOUR USE OF THE SYSTEM. USE OF THE SYSTEM IS AT YOUR SOLE RISK.

INDEMNIFICATION; RELEASE; LIMITATION OF LIABILITY.

- (A) Indemnification. You agree to indemnify and hold FEP, any and all parent, subsidiary, and affiliate organizations, and their respective officers, directors, agents, shareholders, members, managers, advisors, consultants, employees, successors and assigns (collectively, the "Protected Parties") harmless from and against all losses, costs, liabilities, expenses (including reasonable attorneys' fees and expenses), claims, demands, and damages, actual and consequential, of every kind and nature, known and unknown, suspected and unsuspected, disclosed and undisclosed (collectively, "Losses"), that are in any way due to or arising out of Your use of the System, unless caused by the gross negligence or willful misconduct of FEP. FEP reserves the right, at Your expense, to assume the exclusive defense and control of any matter for which You are required to indemnify any of the Protected Parties, and You agree to cooperate with FEP's defense of such claims. FEP will use reasonable efforts to notify You of any such claim, action, or proceeding which is subject to this indemnification upon FEP becoming aware of it.
- (B) Limitation of Liabilities. IN NO EVENT SHALL FEP, ITS LICENSORS, SUPPLIERS, CONTENT PROVIDERS OR THEIR RESPECTIVE PARENTS, SUBSIDIARIES, AFFILIATES, OFFICERS, DIRECTORS, SHAREHOLDERS, ADVISORS, CONSULTANTS, EMPLOYEES, SUCCESSORS OR ASSIGNS, BE LIABLE TO YOU OR ANY THIRD PARTY FOR ANY INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR EXEMPLARY DAMAGES (INCLUDING BUT NOT LIMITED TO LOSS OF BUSINESS, PROFITS, USE, REVENUE OR OTHER ECONOMIC ADVANTAGE), ARISING OUT OF OR IN CONNECTION WITH THE SYSTEM OR THESE TERMS BASED ON ANY THEORY, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE LIMITATION OF DAMAGES SET FORTH ABOVE IS A FUNDAMENTAL ELEMENT OF THE BASIS OF THE BARGAIN BETWEEN US AND YOU. THE SYSTEM WOULD NOT BE PROVIDED FOR SALE TO YOU WITHOUT SUCH LIMITATIONS. IN NO EVENT WILL OUR LIABILITY, OR THE LIABILITY OF OUR LICENSORS, AND OUR RESPECTIVE PARENTS, AFFILIATES, SUBSIDIARIES, OFFICERS, DIRECTORS, SHAREHOLDERS, EMPLOYEES, ADVISORS, CONSULTANTS, SUCCESSORS OR ASSIGNS, TO YOU OR ANY THIRD PARTIES IN ANY CIRCUMSTANCE EXCEED ONE HUNDRED DOLLARS (US \$100.00). SOME STATES OR OTHER JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS AND EXCLUSIONS MAY NOT APPLY TO YOU.

Choice of Law; Dispute Resolution. The Agreement shall be governed by, and construed in accordance with the laws of the State of Alabama, without regard to its conflicts of law provisions. In the event of any dispute, claim, question or disagreement ("Claim") between You and FEP arising from or relating to Your use of the System, You and FEP will attempt, in good faith, to resolve any Claim within thirty (30) days after written notice of the Claim. Any Claim not so resolved shall be finally settled by binding arbitration administered by the American Arbitration Association under its Commercial Arbitration Rules, using the Expedited Procedures. Judgment on the award rendered by the arbitrator(s) may be entered in any court of competent jurisdiction. The arbitrator shall be an individual generally skilled in the legal and business aspects of the subject matter of this Agreement. The arbitrator shall have no authority to impose penalties or award punitive damages. The arbitration shall take place in Madison County, Alabama, and the arbitrator shall apply the law of the State of Alabama and applicable rules of evidence. If all parties and the arbitrator agree, arbitration may take place by telephone or by written communication. Unless the arbitrator otherwise directs, the parties, their representatives, other participants, and the arbitrator shall hold the existence, content, and result of the arbitration in confidence. No action, regardless of form, related to the obligations of the parties under this Agreement may be brought by either party against the other more than one (1) year after the cause of action has

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accrued. In any proceeding to enforce this Agreement, the prevailing party will have the right, in addition to its other rights hereunder, to recover its reasonable litigation costs and reasonable attorneys' fees.

Nothing in this Section shall preclude any party from seeking equitable relief from a court of competent jurisdiction or exercising any self-help remedies, whether before, during or after the pendency of any arbitration proceeding. The parties agree that taking any such action does not waive any right that either party has to demand arbitration at any time with respect to subsequent or amended disputes claimed or filed against a party after commencement of litigation. BY AGREEING TO THESE TERMS AND CONDITIONS, ALL PARTIES AGREE TO WAIVE ANY RIGHTS TO A JURY OR COURT TRIAL. If any provision of this dispute resolution procedure is held invalid or unenforceable, the remaining provisions shall remain in full force and shall not be affected by the invalidity of any other provision.

By tapping "Accept", you again agree and confirm that you have read and understood these Terms of Service and the Disclaimer.

Accept

٧. Entire Agreement; Assignment; Miscellaneous. These Terms constitute the complete and exclusive statement of the agreement between You and us. It supersedes any and all prior or contemporaneous agreement, oral or written, and any other communications, representations, warranties and understanding relating to the subject matter hereof. If there is a conflict between an oral or written representation of any FEP employee or agent, or any Dealer or Distributor employee or agent, and these Terms, these Terms will prevail. These Terms will prevail over other rules and policies on the System. Our failure to enforce any provision of these terms shall not be deemed either a waiver of such provision or a waiver of the right to enforce such provision. If any provision of these Terms is held by an arbitrator or court of competent jurisdiction to be contrary to law, then such provision shall be construed, as nearly as possible, to reflect the intentions of the parties and the other provisions shall remain in full force and effect. The provision of these Terms which, by their terms should survive termination or expiration of these Terms, shall survive the termination or expiration hereof. FEP may assign this Agreement to any other entity of its choosing, with or without notice to You. You may not assign these Terms to any other party without the prior written consent of FEP. FEP shall not be deemed to have waived any of its rights or remedies unless such waiver is in writing and signed by FEP. No delay or omission on the part of FEP in exercising any rights or remedies shall operate as a waiver of such rights or remedies or any other rights or remedies on future occasions. The section titles in these Terms are solely used for the convenience of the parties and have no legal or contractual significance.

END OF HIT-NOT® WARRANTY TERMS AND CONDITIONS

4 Revision History

Original Release. No revision history.