

Installation & Operating Manual

Nor-Ray-Vac Modulating Inverter

Initial Set for ABB ACS310

Warnings

Nortek Global HVAC equipment must be installed and maintained in accordance with the requirements of the Codes of Practice or rules in force.

All external wiring must comply with the codes of practice or rules in force in the country of installation. Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death.



IMPORTANT NOTICE TO INSTALLERS

Installers should satisfy themselves that the gas pipework installation is carried out in accordance with all current legislation, Codes of Practice and recommendations.

Additionally it may be necessary to protect the gas valves which form part of the heater or burner assembly from potential pipe contamination particularly, but not exclusively, where copper gas pipework is used.

In instances where copper pipework is to be used for all or part of a gas pipework installation, including short length final connections then we advise that installers consult with gas supplier or provider and satisfy themselves what additional precautions may be necessary.

Improper installation, adjustment, alteration, service, or maintenance can cause property damage, injury, or death. Read the installation, operation, and maintenance

instructions thoroughly before installing or servicing this equipment.

Do not use this appliance if any part has been immersed in water. Immediately call a qualified service technician to inspect the appliance and replace any gas control that has been immersed in water.

Gas-fired appliances are not designed for use in hazardous atmospheres containing flammable vapours or combustible dust, in atmospheres containing chlorinated or halogenated hydrocarbons or in applications with airborne silicone substances.

Should overheating occur, or the gas supply fail to shut off, shut off the manual gas valve to the appliance before shutting off the electrical supply.

This appliance is not intended for use by persons (including children) with reduced

sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance. Any reference made to Laws, Standards, Directives, Codes of Practice or other recommendations governing the application and installation of heating appliances and which may be referred to in Brochures, Specifications, Quotations, and Installation, Operation and Maintenance manuals is done so for information and guidance purposes only and should only be considered valid at the time of the publication.

The manufacturer cannot be held responsible from any matters arising from the revision to or introduction of new Laws, Standards, Directives, Codes of Practice or other recommendations.

The warranty is void if:

- Wiring is not in accordance with the diagram furnished with the heater.
- The unit is installed without proper clearances as soon as clearances are required regardless of the material being combustible.
- A fan model is connected to a duct system or if the air delivery system is modified.



Failure to comply with the information given with these symbols will result in severe personal injury or death and/or property damage.

Warnings: For your safety, if you smell gas:

- Do not try to light any appliance
- Do not touch any electrical switch, do not use any phone in your building
- Evacuate all personnel & contact your gas supplier immediately
- Do not store or use petrol or other flammable vapours and liquids in the vicinity of the appliance.
- Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death.
- Read the installation, operation and maintenance instructions thoroughly before installing or servicing this equipment.
- Do not store or use petrol or other flammable vapours and liquids in the vicinity of this or any other appliance.
- In case of persisting problems, contact your distributor

1. ABB ACS310 General information

The use of an inverter on the Nor-Ray-Vac BH300 fan system allows the end vent suction to be adjusted by varying the fan speed. The description for adjusting the fan speed is given in the following section. Apart from this change the commissioning instructions described in the Nor-Ray-Vac technical manual should be followed. When supplied as part of a complete local relay unit the inverter is pre-set at the factory for on-site use.

When supplied as a new or replacement stand-alone unit, this document describes in detail the initial set up procedure for the inverter.

The information contained in this technical bulletin is designed to aid a qualified or competent service technician.

Apart from this instructions the ABB ACS310 drive user's manual has to be read accordingly.

1.1 Tools required

- Inverter part No. N1886 (4.0kW) and N1886-1 (Display)
- Electrical screwdriver
- Multi-meter.

Where the inverter is to be fitted as a replacement for the earlier ATV 11 type, please use the following diagram as guide for the new mounting hole positions.

Overview

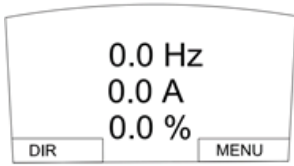
The following table summarizes the key functions and displays on the Basic control panel.

No.	Use
1	<p>LCD display – Divided into five areas:</p> <p>a. Upper left – Control location: LOC: drive control is local, that is, from the control panel REM: drive control is remote, such as the drive I/O or fieldbus.</p> <p>b. Upper right – Unit of the displayed value.</p> <p>c. Center – Variable; in general, shows parameter and signal values, menus or lists. Shows also fault and alarm codes.</p> <p>d. Lower left and center – Panel operation state: OUTPUT: Output mode PAR: Parameter mode MENU: Main menu. FAULT: Fault mode.</p> <p>e. Lower right – Indicators: FWD (forward) / REV (reverse): direction of the motor rotation Flashing slowly: stopped Flashing rapidly: running, not at setpoint Steady: running, at setpoint SET: Displayed value can be modified (in the Parameter and Reference modes).</p>
2	RESET/EXIT – Exits to the next higher menu level without saving changed values. Resets faults in the Output and Fault modes.
3	MENU/ENTER – Enters deeper into menu level. In the Parameter mode, saves the displayed value as the new setting.
4	Up – <ul style="list-style-type: none"> • Scrolls up through a menu or list. • Increases a value if a parameter is selected. • Increases the reference value in the Reference mode. • Holding the key down changes the value faster.
5	Down – <ul style="list-style-type: none"> • Scrolls down through a menu or list. • Decreases a value if a parameter is selected. • Decreases the reference value in the Reference mode. • Holding the key down changes the value faster.
6	LOC/REM – Changes between local and remote control of the drive.
7	DIR – Changes the direction of the motor rotation.
8	STOP – Stops the drive in local control.
9	START – Starts the drive in local control.



2. Step by step instructions

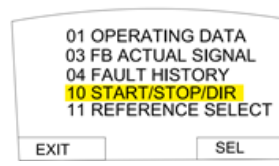
Turn power on to the control panel. Both power on, and system healthy indicator lamps should illuminate.



1. Press MENU to go to the main menu



2. Select PARAMETERS with the UP/DOWN keys and press ENTER to go to the Parameters mode.



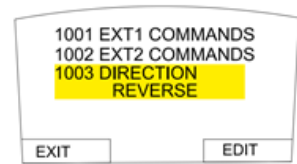
3. Select parameter group 10 and press SEL.



4. Select parameter 1001 In a group and press EDIT to change the parameter valve. Press SAVE.



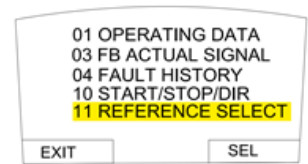
5. In a group and press EDIT to change the parameter valve. Press SAVE.



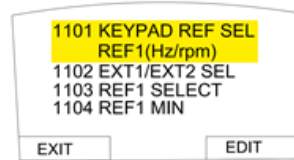
6. Select parameter 1003 In a group and press EDIT to change the parameter valve.



7. Repeat this step if forward direction required. Press SAVE. Press EXIT.



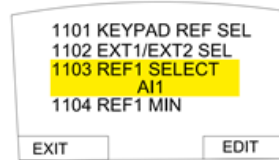
8. Select parameter group 11 and press SEL.



9. Select parameter 1101 In a group and press EDIT to change the parameter REF1(Hz/rpm).



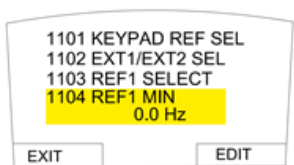
10. Press SAVE.



11. Select parameter 1103 In a group and press EDIT to change the parameter AI1.



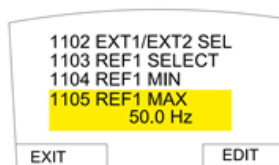
12. Press SAVE.



13. Select parameter 1104 In a group.



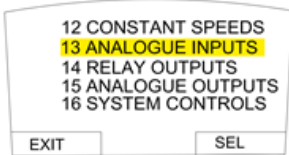
14. Press EDIT to change the parameter valve to suit site setting. Press SAVE



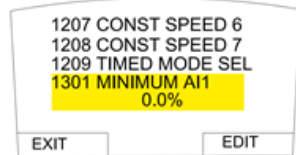
15. Select parameter 1105 In a group and press EDIT to change the parameter valve 50.0 Hz.



16. Press SAVE. Press EXIT.



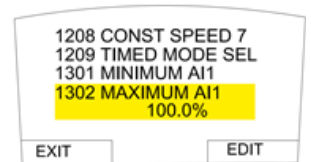
17. Select parameter group 13 and press SEL.



18. Select parameter 1301 In a group and press EDIT to change the parameter valve to suit the site setting.



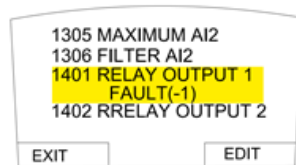
19. Press SAVE.



20. Select parameter 1302 In a group and press EDIT to change the parameter valve 100.0%



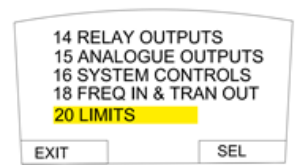
21. Press SAVE



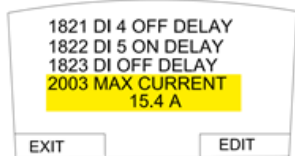
22. Select parameter 1401 In group 14 and press EDIT to change the parameter valve FAULT(-1)



23. Press SAVE and press EXIT.



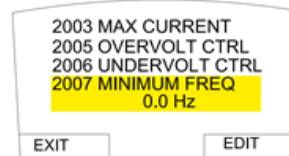
24. Select parameter group 20 and press SEL.



25. Select parameter 2003 In group 20 and press EDIT to change the parameter valve of the Motor FLC.



26. Press SAVE.



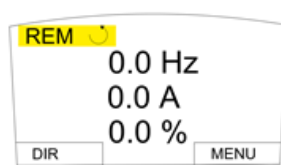
27. Select parameter 2007 In group 20 and press EDIT to change the parameter valve to suit site setting.



28. Press SAVE.



29. Press EXIT 3 times till PARAMETERS screen appears.



30. Press LOC/REM button to change the mode to REM (remote).

After the whole set-up is completed, check that there are no faults or alarms shown on the display and the panel LED is green and does not blink.



Have you registered your warranty?

Register online at www.reznor.eu/warranty-registration

- ✓ Investment protection
- ✓ Expert technical support
- ✓ Extended warranty options available

Please call us on **01384 489 700** for more details, T&C's apply

This document replaces the previous, Manual Part No. N/A
Current full Part No. **Reznor, NRV Inverter ABB ACS310, EN, Oct, 18, D301181**



Nortek Global HVAC (UK) LTD

Fens Pool Avenue, Brierley Hill
West Midlands, DY5 1QA
United Kingdom

Tel: +44 (0) 1384 489 250

Fax: +44 (0) 1384 489 707

Email: reznorsales@nortek.com

AFFIX AGENTS DETAILS HERE