VIS STANDARD BRAKES - OPERATING MANUAL (NEMA CL II DIV 2 Group F G)

Introduction:

These safety instructions refer to the installation, operation and maintenance of the VIS N for CL II DIV 2 group F G. Item type VSTDN.

The VIS standard brakes are negative spring applied brakes ready to be assembled to NEMA C-face 56 to 404.

Output flanges and shafts can be NEMA or IEC or special designed on request.

Manufacturer's liability

The manufacturer will not assume any responsibility for damage caused by failure to use the products in accordance with their intended use or by failure to observe safety information and other instructions provided in this manual. The information in this manual was correct and up-to-date before going to print. The information contained herein shall not entitle users to raise claims with respect to components purchased at an earlier date.

Mounting the brake module to the motor

Mount the brake module in a vertical position with the motor shaft pointing vertically upwards. Mount the brake module to the motor by slipping it onto the brake shaft until it makes contact with the motor flange. Ensure that the brake is parallel to the motor shaft and that a form-fit connection is established between the brake shaft and the flanges.

The brake shaft and ball bearing must not be exposed to any axial shocks.

Attention!

The tightening torque specified for the mounting screws must be strictly observed (see UNI EN 15048-1:2007). Tighten the mounting screws evenly in several steps.

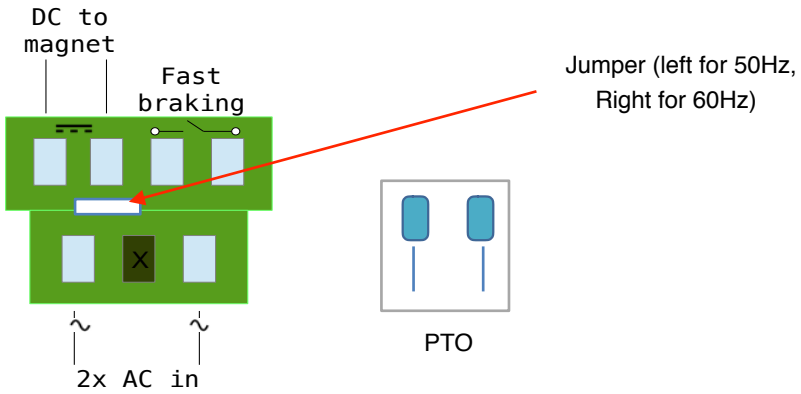
Electrical connection

The following checks must be carried out when connecting the brake:

- Check that the connecting cables are suitable for the intended use and for the voltage and amperage of the brake.
- Check that the connecting cables are secured with screws, clamps or other suitable fixtures to avoid interruptions in the power supply.
- Check that the connecting cables are long enough for the intended use and that suitable torsion, strain and shear relief features as well as bending protections are provided.
- Check that no foreign matter, dirt or humidity is trapped inside the terminal box.
- Check that unused cable entries and the terminal box are suitably sealed to ensure compliance with the protection class requirements to EN 60529.

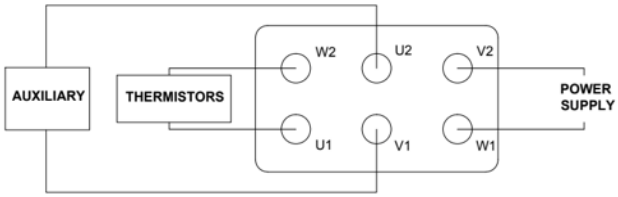
VERSION A With rectifier

*Connection diagram**



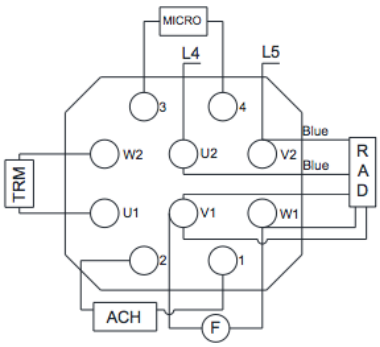
*The VIS standard series is supplied with a special rectifier suitable for AC 200 to 500 with fixed DC output. Other voltages are on request.

VERSION B Without rectifier + Aux

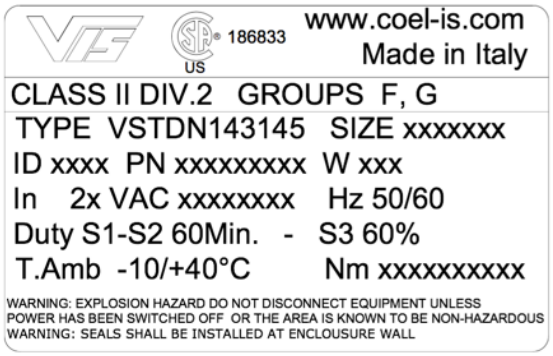


VERSION C with fix one voltage and options

TRM: THERMISTORS
F: MAGNET
RAD: RECTIFIER
MICRO:MICROSWITCH OR INDUCTIVE SENSOR
ACH: HEATER
L1 L2 L3: AC 3PH INPUT
L4 L5: RECTIFIER AC 1PH INPUT



Nameplate Example



Type: Brake frame
ID: Lot number
IM: Input and output IEC flange and shaft
In VAC 2x: Input voltage range to the rectifier
W Max: Maximum power consumption to the rectifier
Duty: Designed duty
IP: protection level
T.amb.: Ambient temperature allowed
Nm: Nominal brake torque + - 15%

MARKINGS

The VIS N series brakes are designed following the CLASS 4228 81 – certified to U.S. standards.

The following markings are applied on a metal nameplate, secured by rivets:
1. Manufacturers name, trade name or CSA Master Contract number “186833” adjacent to the CSA mark.
2. Complete electrical ratings in Volts (Vdc or Vac), frequency (Hz) and power consumption (W).
3. Duty Service
4. Model number
5. The CSA mark with adjacent indicator ‘US’
6. Serial number.
7. Hazardous locations designation
8. “Warning: Explosion hazard, Do not disconnect power unless power has been switched off or the area is known to be non-hazardous”
9. “Warning: Seals shall be installed at enclosure wall”

Caution!

The brake module surface temperature may rise to over 100°C. Heat-sensitive parts such as conventional cables or electronic components must not be fixed to or be in contact with these surfaces. If necessary, suitable protections and hand guards must be installed to avoid accidental contact with hot surfaces!

Maintenance
Checks and service

The spring-applied single-disc brake module does not require any particular maintenance except that the air gap and the degree of wear of the friction disc must be measured at regular intervals. For this purpose, the brake must be released electromagnetically (while the motor is shut down) to allow the air gap between the armature and friction disc to be measured through the threaded bore by means of a feeler gauge. The air gap can only be measured after having removed the cover or – when using brakes with hand release – after having removed the screws of the hand release. If the maximum air gap max of 1mm is reached, the friction disc must be replaced to maintain the functional reliability and safety of the brake. When replacing the friction disc, check the friction surfaces of the armature and flange. It is not possible to perform adjustments (air gap adjustments) to compensate for wear. The ball bearings are factory-lubricated with grease for a maximum service period of 3 years. If the ball bearings (accessories) needs to be replaced, make sure to use bearings of the same type or of identical design. The sealing rings do not require any maintenance. However, they should be replaced every time the brake module is opened. For detailed instructions regarding brake disc replacement please contact us.

Intended use

The brakes described in these operating instructions are intended to be assembled with machines, in particular electric motors, for use on industrial plants.

General safety information

Brake modules fitted to motors feature hazardous live components and rotating parts and may exhibit hot surfaces. Any work associated with the transport, connection, start-up and periodical maintenance of the brakes must be carried out by authorized and suitably qualified personnel (in accordance IEC 364). Failure to observe safety, operating and maintenance instructions may cause serious personal injury and severe damage to the equipment. Whenever special measures are required in accordance with the instructions contained herein, such measures should be agreed with the brake manufacturer before the machinery into which the brake is to be incorporated is set up. Accident prevention regulations applying to the specific field of application of the brake must be strictly observed. The brakes described in this manual are not designed for use as "safety brakes". This means that torque reductions caused by factors beyond the user's control cannot be excluded.

Standards and warnings

APPLICABLE REQUIREMENTS

FM 3600 : 2011 Approval Standard for Electrical Equipment for use in Hazardous (Classified) Locations General Requirements
FM 3616 : 2011 Dust-Ignition proof Electrical Equipment General Requirements
FM 3615 : 2006 Explosion proof Electrical Equipment
ANSI/IEC 60529 : 2004 Degrees of Protection Provided by Enclosures (IP Code) (identical national adoption)
FM 3810 : 2005 Approval Standard for Electrical Equipment for Measurement, Control, and Laboratory Use
ANSI/ ISA-61010-1 (82.02.01) : 2004 Safety Requirements for Electrical Equipment for Measurement, Control, and laboratory Use - Part 1 General Requirements

GENERAL SAFETY WARNINGS

Improper use, lack of inspection and maintenance can cause serious harm. The personnel must be informed of any danger caused by contact with live parts, rotating parts and hot surfaces. In normal working conditions the brake exceeds 50°C.
The VIS n brake must be moved, installed, put in service inspected, maintained and repaired only by qualified personnel.
The VIS brake is a component made to be mechanically connected to another machine. Consequently, it is the task of the person responsible for the installation to guarantee that during operation there is an adequate degree of protection for people or things against the danger of accidental contact with moving parts.

STORAGE

The brakes are shipped ready for installation. Upon receipt remove packaging and turn the shaft to check the brake has not been damaged, also check all physical aspects of the machine for damage. In the case where the brake is damaged an immediate notification must be given to Coel within 3 days.
In storing case, the brakes must be conserved in dry place, lacking in powders, vibrations, gas and corrosive smoke, with uniform temperature and held in normal position. The temperature of

the brakes stocking place must be between 5°C and 45°C, with relative humidity not over 60%. The storing time does not have to be longer than 18 months.