

VARIABLE SPEED DRIVES



TREND

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At least half of the electricity consumed by buildings is used to circulate air and water. Too often these systems are run at full power, irrespective of need, resulting in waste. For efficiency and environmental reasons, HVAC systems increasingly incorporate variable speed drives that precisely control the speed of the fans or pumps.

This makes the system operate more efficiently, significantly reducing energy use and costs. Trend variable speed drives (VSDs), which operate as part of a complete building control system, are designed specifically for HVAC applications to deliver the energy savings that building owners and facility managers' demand.

SIGNIFICANT ENERGY SAVINGS

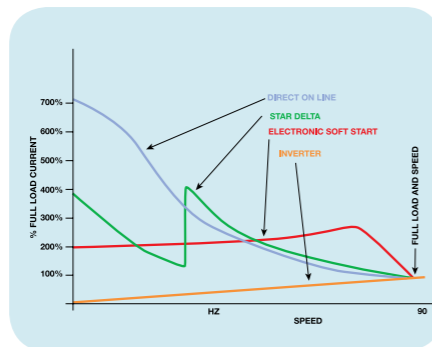
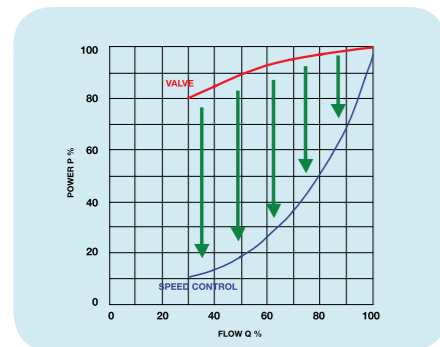
Variable speed drives are used in a wide range of applications. In an HVAC environment they regulate air and water flows, avoiding wasteful pumping and heating or cooling of water when only a proportion of the energy is required.

With just small adjustments to the fan or motor speed, significant amounts of energy can be saved. Savings are determined by the Cube Law: for example reducing flow rate by 20% could reduce power consumption by around 50%.

EASY INSTALLATION AT LOWER COST

Significant savings can also be achieved on installation costs. The switchgear associated with motor control and power factor correction capacitors are not required and motor cables are reduced from six to three wires. As the starting current is always maintained within the nominal value, size and cost of cabling and fuses are also minimised.

The new generation Trend VSD2H is one of the most compact drives on the market. Available in IP54 and IP21 packages, it is easy to mount on a wall or in an enclosure, even with limited space. Its 'bookshelf' design allows side-by-side installation in tight spaces where space is a premium.



DELIVERING ENERGY AND COST SAVINGS TO YOU

FAST PAYBACK

Payback on a variable speed drive is usually less than two years and could be as little as three months. The payback period varies according to the cost of electricity, fan or pump size, length of running time and the achievable reduction in flow rate. You can calculate the payback for your system by using the calculator on the inside back page of this brochure.

SIMPLE TO USE

Putting the Trend VSD2H to work is very simple. The quick set up configures the drive in four easy steps.

Easy to install and use, the Trend VSD2H uses the latest technology to improve efficiency and reduce energy consumption and costs. Take a closer look!



FEATURES AND BENEFITS OF THE TREND VSD2H

Trend's new VSD2H ranges from 3.3 to 310 Amps and is available in IP21 and IP54. It meets the latest harmonic standard EN 61000-3-12 and is built for reliability. Designed using the latest technology, it is easy to use, puts you in control and, above all, substantially reduces costs.

SAVES MONEY

As stated before, by controlling the speed of your fan or motor significant amounts of energy can be saved. Reducing flow rates reduces power consumption resulting in substantial reduction in energy costs.

EASY TO USE

Using and controlling the Trend VSD2H is simple.

- An easy to use text keypad gives you complete control of the system.
- A real time clock time stamps faults, alarms and events, alerting you to the exact time when a problem occurred.

A DRIVE WITH REAL INTELLIGENCE

The Trend VSD2H has extra features which provide real intelligence in controlling a fan or pump. These features help protect your HVAC system, extending its life and reducing maintenance costs.

- **Ramp time optimisation** - automatically optimises acceleration and deceleration of the pump, avoiding the pressure spikes in pipes or air ducts that are caused by increasing or decreasing speed too rapidly.
- **Anti resonance sweeping** - identifies potential vibration areas so that specific resonant frequencies can be avoided, ensuring that the system is run at the correct frequency.
- **Intelligent motor control** - decreases speed and switches frequency if the inverter warms up too much preventing trips and increasing the lifespan of the drive.

EASY TO INTEGRATE

If you already use a Trend system, the Trend VSD2H appears as a standard Trend device on your network, simply by adding an optional LAN or Trend Ethernet card.

Built in communications of the Trend VSD2H provide easy, reliable and low cost integration with your building management system and provide all the energy data from the drive on your laptop or Trend supervisor/display.

RS485

- BACnet
- Modbus
- N2

Ethernet

- BACnet/IP
- Modbus/TCP

RELIABLE AND ROBUST

The Trend VSD2H has been designed to provide greater reliability and robustness than typical HVAC systems. Varnished boards and electrolyte-free capacitors improve the system's tolerance to adverse conditions, helping to prevent damage from dirt and dust.

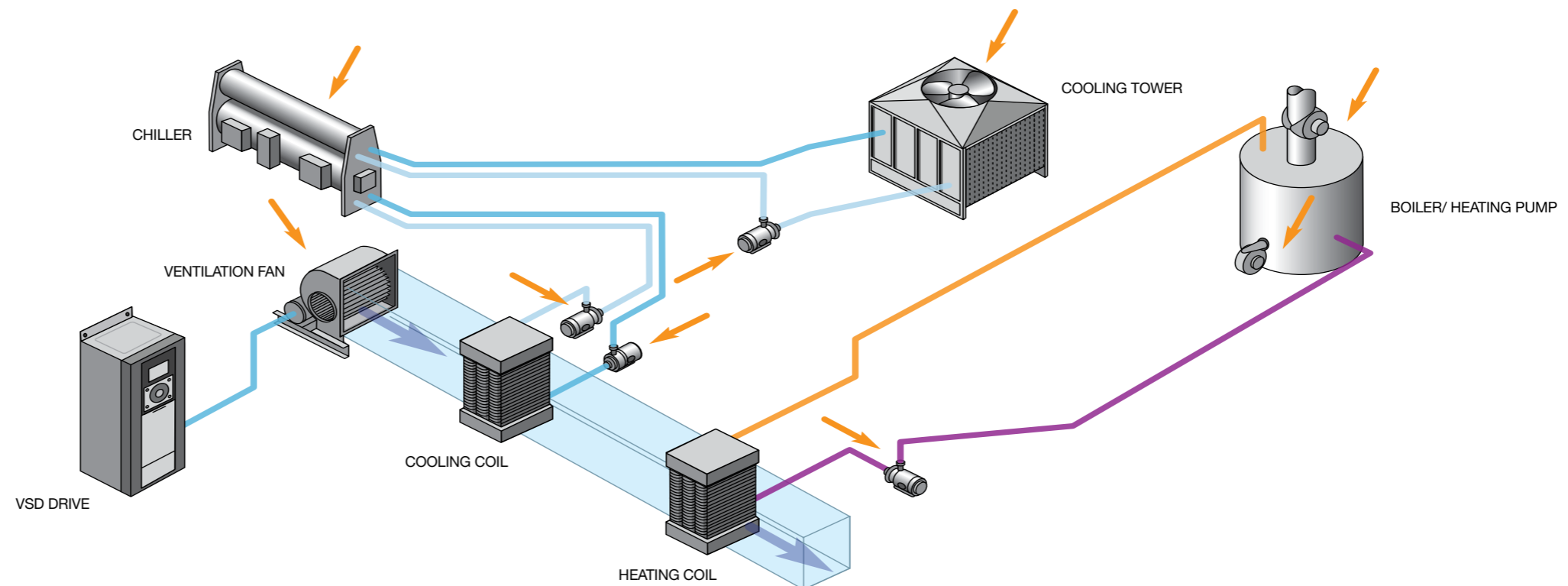
EASY, LOW COST INSTALLATION

Compact and flexible, the Trend VSD2H is quick and easy to install, reducing your installation costs.

- It can be easily mounted on a wall, making it the ideal choice when space is at a premium.
- Simpler cable arrangements mean that installation is easier and quicker.
- Guided Startup and PID Wizards make commissioning, programming and troubleshooting simple.
- A programming tool allows you to commission drives across Ethernet from your laptop.
- No cable glands needed.

WHERE TO USE VARIABLE FREQUENCY DRIVES

Heating, Ventilation and Air Conditioning (HVAC) system



HOW TO ORDER YOUR TREND VSD2H

All Trend products are sold via an extensive network of well-established Partners - Trend Technology Centres and System Integrators. These Partners provide many benefits for end-users, as well as their controls expertise they are able to offer independent advice with over system design and ancillary component selection. A full list of Trend Partners can be found on our web site www.trendcontrols.com

Product	Power	Enclosure
VSD2H Speed Drive	1.1kw – 160kw	IP21 or IP54

ACCESSORIES

- Commissioning Keypad
- VSD2H Replacement Text Keypad
- VSD2H PC Adapter Kit (USB cable adaptor and cable)
- VSD2H Door Panel Kit
- VSD2H Hand-held Panel Kit



PRODUCT CODE MODEL

VSD2H/ 3P 480/ 031 B/ IP21

Product Family
VSD2H = Trend VSD HVAC

Input Phase
3P = Triple Phase (3~in, 3~out)

Nominal Voltage
380-480v

Enclosure Type
IP21
IP54

Interface
B = Text KeyPad

Low Overload Current
From 3.3 > 310 Amps
003 = 3.3 Amps (1.1 kw)
310 = 310 Amps (160kw)

50% OFF FAN AND PUMP RUNNING COSTS

See how much you could save with the Trend VSD Payback Calculator:



Simply insert into your disc drive and follow the instructions. If it does not auto start, view CD contents and double click the vsd.exe file.

ACHIEVING ENERGY SAVINGS IS EASIER THAN YOU THINK!

- Variable speed drives save significant amounts of energy by adjusting fan or motor speed.
- Reducing speed by just 20% could mean energy savings of 50%.
- Wizards to guide setup.
- Easy to integrate, install and use.
- Payback is fast – typically less than two years.



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