



VarioTrane

TR1 Series

Variable Frequency Drives





Is your energy bill way too high ?

Do you want to lower your Operating Costs ?

As a worldwide leader of air conditioning systems for commercial and industrial applications, Trane dedicates its **expertise in Building Management** to assist HVAC designers and users in achieving higher energy efficiencies and immediate savings.

Where are the opportunities ?

In both Building and Industrial Cooling installations you can find sources of energy consumption such as fans and pumps. Ideal savings opportunities are :



Fans in

- air handling units
- rooftop units
- supply or return air systems
- VAV or CAV systems
- condenser or cooling towers
- smoke exhaust systems
- air filtration units

Pumps in

- primary/secondary pumping systems
- chilled water systems
- dry cooler or cooling tower systems
- filtration systems
- pressure booster systems

All above mentioned units and systems normally have a wide range of operating conditions, with the same need for smooth and reliable operation, lower noise levels and optimum energy use.

An easy way to cut right into the energy bill is to adapt the motor speed of the HVAC fans and pumps. Why ? The building or production site do not face the same loads 24/7, meaning that the speed should be adjusted to the exact needs, instead of running at a constant speed.

The “state of art” technology of VarioTrane TR1 will definitely lead your installation to:

- ☑ **Energy Savings**
- ☑ **Reduced operating and maintenance costs**
- ☑ **Increased system reliability thanks to built-in features**
- ☑ **Optimal building occupant comfort**
- ☑ **Open communication to Building Management Systems**

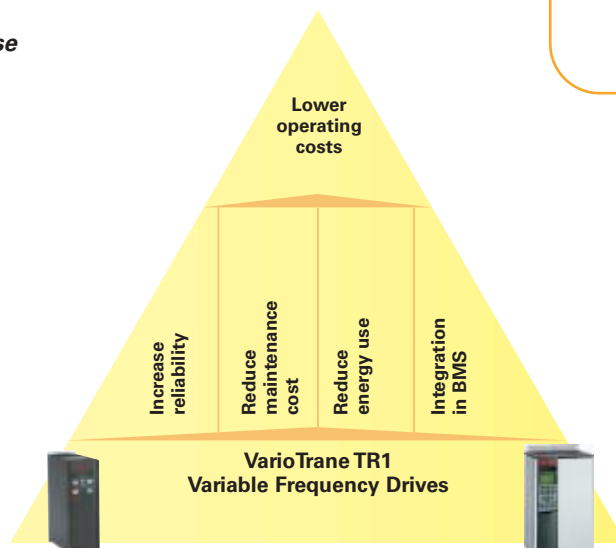
Other features like

- Removable keypad giving access to all parameters**
- User-friendliness
- Plain language alarms**
- Remote mounting

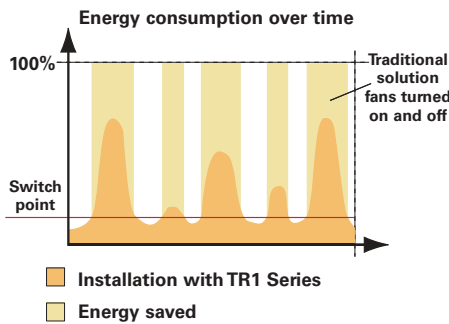
**** on Series 6000**

HVAC installations offer great opportunities for substantial savings on an organization's energy bill. Trane associates can help you

- **calculate and estimate the energy performance of (existing) HVAC systems**
- **design and implement an affordable operating cost saving solution (VarioTrane TR1 Series)**
- **monitor, report and analyze these results**



Constant air volume system application



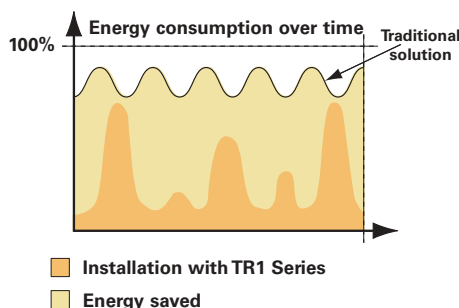
Energy Savings lead to Short Pay Back

The two "Before / After" charts clearly show how much energy can be saved by using or not the TR1 Series in constant air volume application (rooftops on shops, etc...) or Cooling tower applications (process cooling, etc...).

On applications such as AHU fans, secondary chilled water pumps, condenser fans pay back times of 1-2 years can be reached (depending on cost of energy, load profile, motor kW and operational hours).

How does the principle work? By changing the motor speed to 80% of the nominal value, the torque demand will only be about 64% of the nominal value. This means that by reducing the motor speed to 80% of the maximum value, the power consumption will be reduced to about 50% of nominal value.

Cooling Towers application



Optimal building occupant comfort

- Accurate temperature and pressure control
- Optimum water and air flow control
- Eliminate air draft caused by cycling of fans
- Reduced noise level

Complete Solution to All Applications

TR1 Series 2800 is available and integrated in various Trane systems, promoting variable speed to

- improve efficiency of the installation
- increase energy savings

The 80-100% speed inverter option used on 2 Trane rooftops for a typical 2500m² supermarket leads to up to 28 000 kWh saved per year, and a 12-month pay-back only*

**4154 hours at 80%, and 258 hours at 100% for supply fan operation*

TR1 Series 6000, also available as integrated option, is an easy and perfect solution for energy retrofits

- enhanced functionality
- simplicity and cost efficiency in BMS integration



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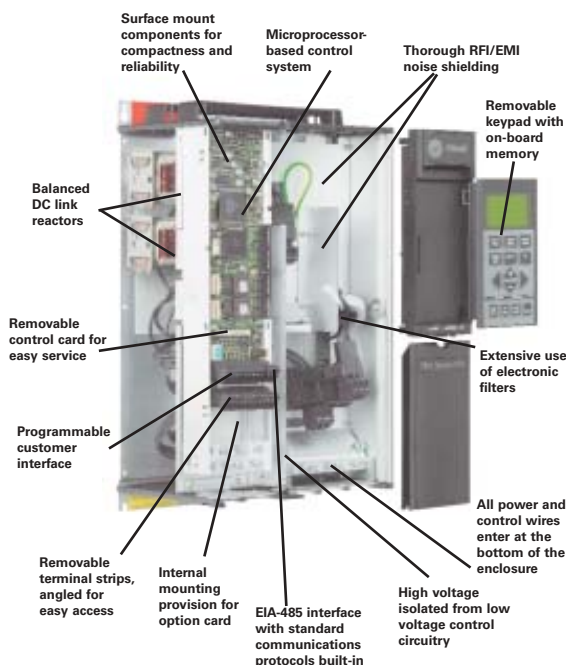
Open Communication

TR1 Series are compatible with virtually all Building Automation Systems protocols such as LonWorks® **, BACnet®, and Modbus® RTU.

Smooth interoperability between each piece of equipment is achieved.

Operators have extensive detailed view and control of system's performance.

*** on Series 6000*



General Data

Motor shaft power (kW)	Voltage 3 x 200V	Enclosure HxWxD		Voltage 3 x 380V	Enclosure HxWxD		Voltage 3 x 600V	Enclosure HxWxD IP20 (mm)
		IP20 (mm)	IP54 (mm)		IP20 (mm)	IP54 (mm)		
1.1	TR1 6002	395x220x160	460x282x195	TR1 6002	395x220x160	460x282x195	TR1 6002	395x220x200
1.5	TR1 6003	395x220x160	460x282x195	TR1 6003	395x220x160	460x282x195	TR1 6003	395x220x200
2.2	TR1 6004	395x220x200	530x282x195	TR1 6004	395x220x160	460x282x195	TR1 6004	395x220x200
3	TR1 6005	395x220x200	530x282x195	TR1 6005	395x220x160	460x282x195	TR1 6005	395x220x200
4	TR1 6006	560x242x260	810x350x280	TR1 6006	395x220x200	530x282x195	TR1 6006	395x220x200
5.5	TR1 6008	560x242x260	810x350x280	TR1 6008	395x220x200	530x282x195	TR1 6008	395x220x200
7.5	TR1 6011	560x242x260	810x350x280	TR1 6011	395x220x200	530x282x195	TR1 6011	395x220x200
11	TR1 6016	700x242x260	940x400x280	TR1 6016	560x242x260	810x350x280	TR1 6016	560x242x260
15	TR1 6022	700x242x260	940x400x280	TR1 6022	560x242x260	810x350x280	TR1 6022	560x242x260
18.5	TR1 6027	800x308x296	940x400x280	TR1 6027	560x242x260	810x350x280	TR1 6027	560x242x260
22	TR1 6032	800x308x296	940x400x280	TR1 6032	700x242x260	810x350x280	TR1 6032	700x242x260
30	TR1 6042	954x370x335	937x495x421	TR1 6042	700x242x260	940x400x280	TR1 6042	700x242x260
37	TR1 6052	954x370x335	937x495x421	TR1 6052	800x308x296	940x400x280	TR1 6052	800x308x296
45	TR1 6062	954x370x335	937x495x421	TR1 6062	800x308x296	940x400x280	TR1 6062	800x308x296
55				TR1 6072	800x308x296	940x400x280		
75				TR1 6100	800x370x335	940x400x360		
90				TR1 6125	800x370x335	940x400x360		
110				TR1 6150	1201x420x373	1201x420x373		
132				TR1 6175	1201x420x373	1201x420x373		
160				TR1 6225	1584x420x373	1584x420x373		
200				TR1 6275	1584x420x373	1584x420x373		
250				TR1 6350	1584x420x373	1584x420x373		
315				TR1 6400	2010x1200x600	2010x1200x600		
355				TR1 6500	2010x1200x600	2010x1200x600		
400				TR1 6550	2010x1200x600	2010x1200x600		

Motor shaft power (kW)	Voltage 1 x 220V	Enclosure HxWxD		Voltage 3 x 220V	Enclosure HxWxD	Voltage 3 x 380V 3 x 480V	Enclosure HxWxD IP20 (mm)
		IP20 (mm)			IP20 (mm)		
0.37	TR1 2803	200x75x168		TR1 2803	200x75x168		
0.55	TR1 2805	200x75x168		TR1 2805	200x75x168	TR1 2805	200x75x168
0.75	TR1 2807	200x75x168		TR1 2807	200x75x168	TR1 2807	200x75x168
1.1	TR1 2811	200x75x168		TR1 2811	200x75x168	TR1 2811	200x75x168
1.5	TR1 2815	200x75x168		TR1 2815	200x75x168	TR1 2815	200x75x168
2.2				TR1 2822	267.5x90x168	TR1 2822	267.5x90x168
3						TR1 2830	267.5x90x168
3.7				TR1 2840	267.5x140x168		
4						TR1 2840	267.5x90x168
5.5						TR1 2865	267.5x140x168
7.5						TR1 2875	267.5x140x168
11						TR1 2880	505x200x244
15						TR1 2881	505x200x244
18.5						TR1 2882	505x200x244

Other enclosures available upon request.



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Literature Order Number	TR1-SLB006-E4
Date	0606
Supersedes	TR1-SLB006-E4_0404
Stocking Location	Europe

Trane has a policy of continuous product and product data improvement and reserves the right to change design and specifications without notice.

www.trane.com

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