To users of our inverters: Our inverters are designed to control the speeds of three-phase induction motors for general industry.

Precautions:

- Read the instruction manual before installing or operating the inverter unit and keep it in a safe place for reference.
- When using our inverters for equipment such as nuclear power control, aviation and space flight control, traffic, and safety, and there is a risk that any failure or malfunction of the inverter could entail serious accidents, or for any other reason, please contact our headquarters, branch, or office prior to the start-up and operation of the system. Special precautions must be taken and each application must be decided carefully.
- When using our inverters for critical equipment, always view the inverter as the last line of defense. An inverter failure may result in the failure of the entire equipment.
- Do not use our inverters for any load other than three-phase induction motors.

For further information, please contact your nearest Toshiba Representative or International Operations-Producer Goods. The information in this brochure is subject to change without notice.
DREAM INVERTER dedicated to fan and pump for HVAC

SPACE SAVING, ECO-FRIENDLY, NOISE-LESS and LONG LIFE

The VF-FS1 provides these features as standard.

**Long life and easy maintenance**

- 15 years life designed main capacitors. **Note1**
- An alarm warns when the main circuit capacitors, circuit boards capacitors, or cooling fan needs to be replaced.
- Cooling fan’s On/Off control extend its life.
- Easy replacement cooling fan by one touch. **Note2**
- The inverter unit can be replaced by removable terminal block without disconnecting cables.

**Ideal functions are built-in for fan and pump application.**

- The local or remote operation can be selected by one touch
- Bumpless function realize seamless operation between local and remote
- Fire control enables forced operation in emergency
- Speed reference can manage on/off operation (Sleep function)
- Low current detection can notice a broken belt or low load for pump application
- PTC thermistor input
- Include RS485 (TOSHIBA/Modbus protocol) communication as standard
- Optional filed buses for LonWorks®, BACnet®, Metasys®N2 and APOGEE® FLN as built in option.

**More energy saving and easier operation**

The advanced energy-saving mode optimizes fan and pump efficiency even at normally inefficient in low speeds.

- The effect can be monitored by operation panel or through serial communication data.
- A wizard function enable set the 10 most often used parameter quickly.
- Toshiba unique technologies suppress harmonics, particularly 5th and 7th harmonic current that affect power sources.
- And the power factor in all models has been improved.
- Harmonics are controlled to within the Total Harmonic Distortion (THD) of international standard IEC61000-3-12 without any external reactor. **(Note 1.20)**

**Point 1** Reactor-less harmonic reduction

Toshiba unique technologies suppress harmonics, particularly 5th and 7th harmonic current that affect power sources. And the power factor in all models has been improved. Harmonics are controlled to within the Total Harmonic Distortion (THD) of international standard IEC61000-3-12 without any external reactor. **(Note 1.20)**

**Point 2** Half installation space and less wiring

Reactor-less harmonic suppress technologies and built-in filter suppress reduce 50%** Note2** of installation space, save time and cost of wiring.

**Note1** 400V class models, EMI noise filter built-in as standard model (European EMC Directive, IEC/EN61800-3, 1st Environment, C2 or IEC/EN61800-3, 2nd Environment, C3) 200V class models, Basic noise filter built-in as standard model

**Note2** IP20/IP00 models

**Point 3** Special softwares for fan and pump application are built-in

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