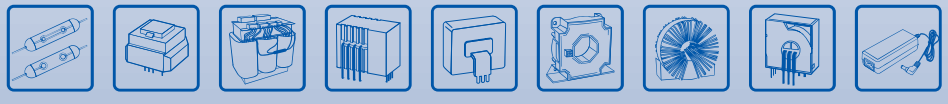
APPLICATIONS GUIDE

ELECTRONICS COMPONENTS



TAMURA

APPLICATIONS GUIDE

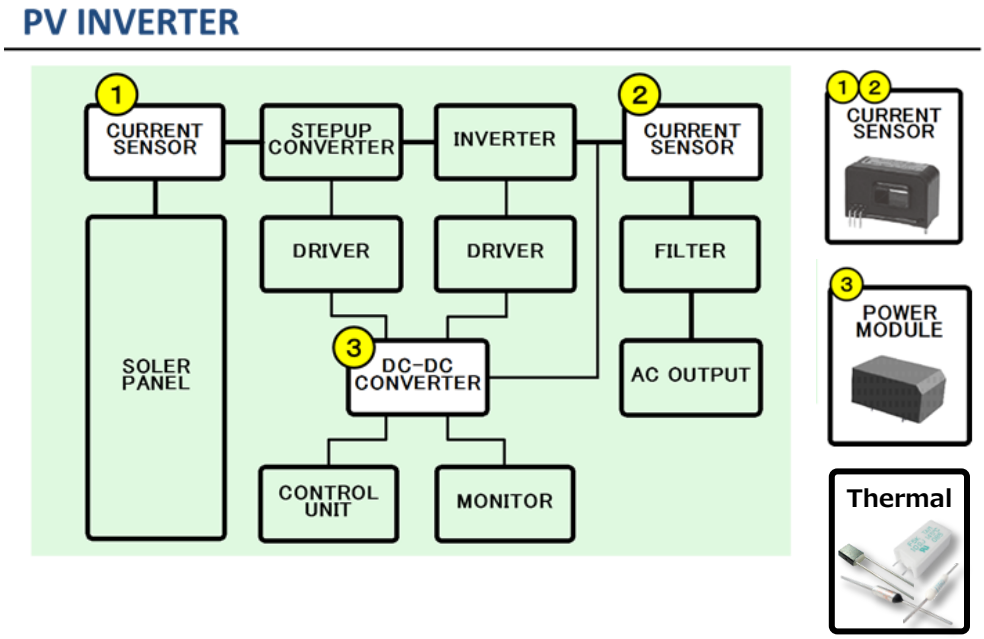
INDEX

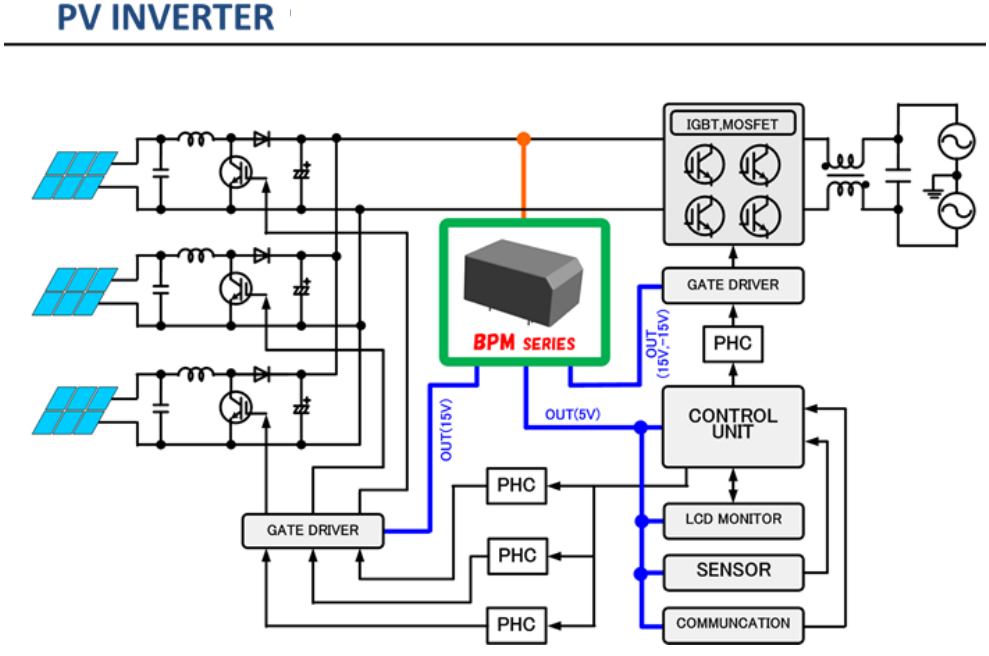
Application : PV Inverter

Features

The PV solar inverter converts the DC power generated by the solar panel into AC power required by consumer and commercial systems. The DC voltage created by the panel is supplied to an inverter equipped with DC boost circuit. PV systems require a compact component design and low-noise and high efficiency operation. The power module can be used to provide DC power required for the inverter and for the microcontroller and other internal electronics. The low noise operation of the power module insures quiet as well as energy-saving high efficiency operation.

Block diagram





Application : PV String Converter

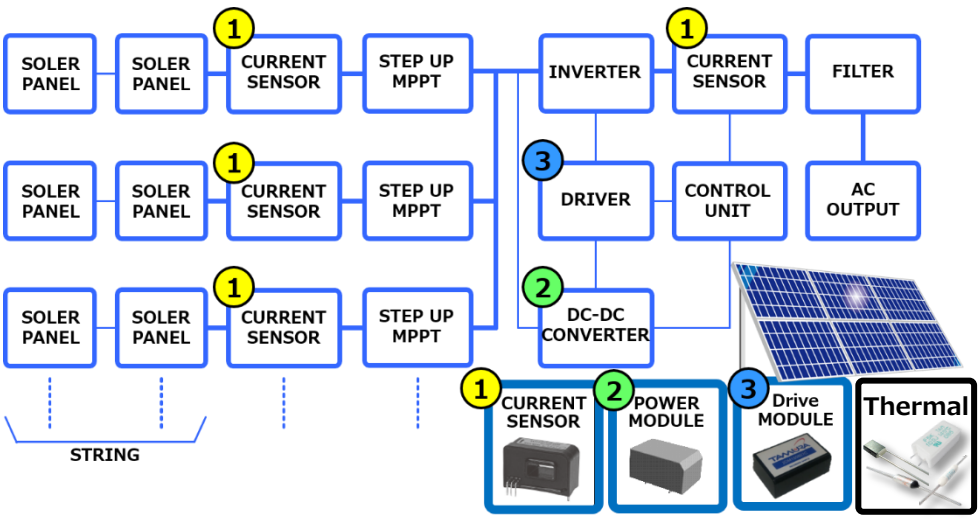
Features

PV string converter is what it is equipped with a step-up circuit and MPPT function to each solar cell module connecting the solar cells in series. PV string converter can be taken out without wasting power of the solar cell, because the converter monitors the voltage, the current, and the power of each string and is possible to trace the maximum power.

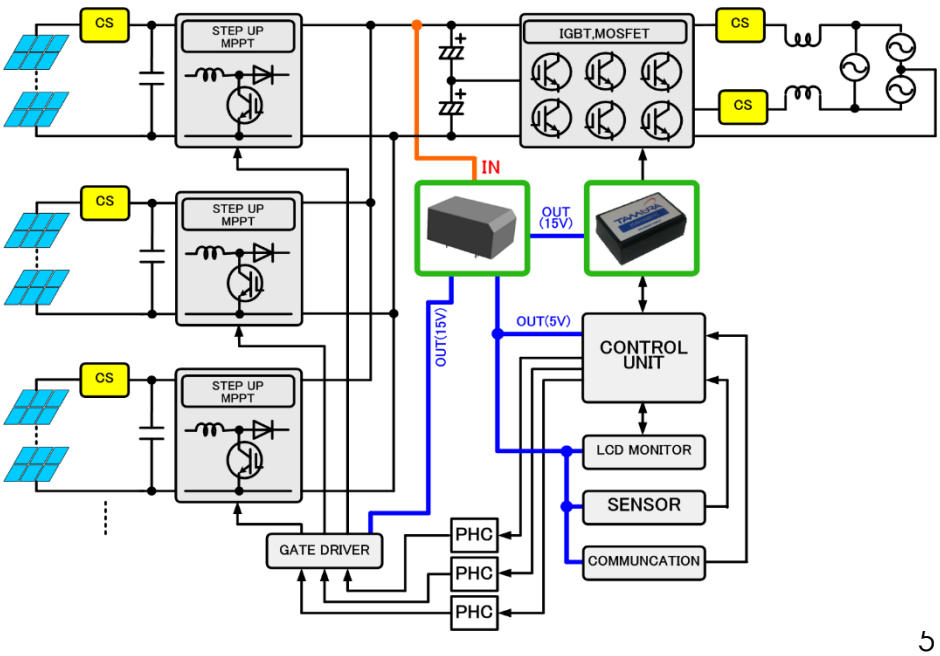
The boosted DC voltage is input to the power module, and the power module can supply the voltage to such as the inverter drive circuit and a microcomputer in the equipment. The power module can contribute to the common-mode noise reduction of the inverter by the reduction of inner floating capacity, and you can drive the IGBT and SiC MosFET stable at the same time.

Block diagram

PV String converter



PV String converter

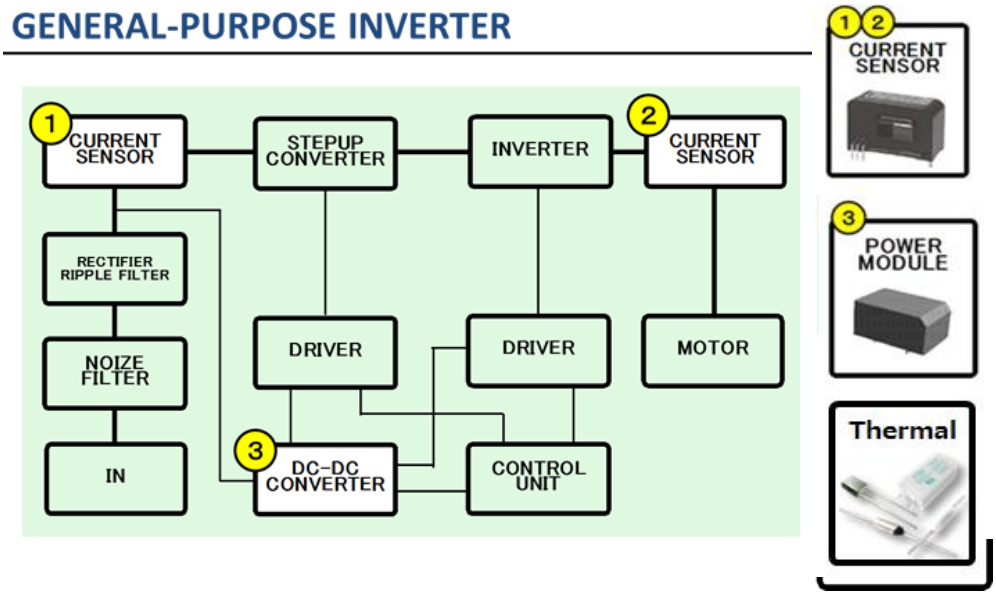


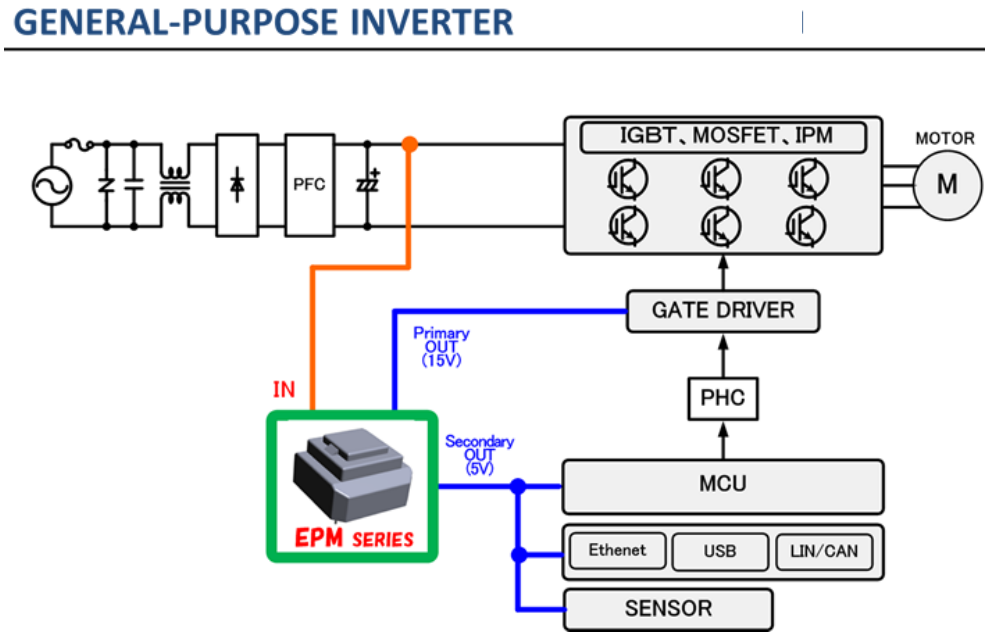
Application : General-Purpose Inverter

Features

The popular variable speed motor drive use a digitally controlled general purpose inverter equipped with DC voltage boost feature to operate motor driven industrial equipment. These VSD systems can be remotely controlled via USB and/or ethernet interfaces. Continued miniaturization of VFD requires compact component design and low-noise and high efficiency operation. The power module can be used to provide DC power required for the inverter and for the microcontroller and other internal electronics. The low noise operation of the power module insures quiet as well as energy-saving high efficiency operation.

Block diagram



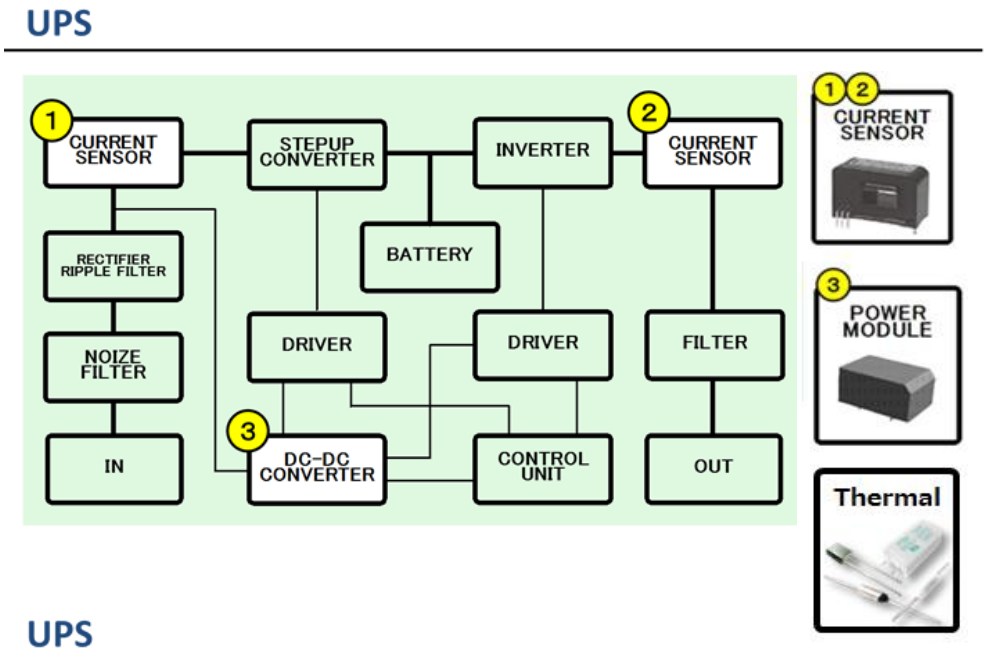


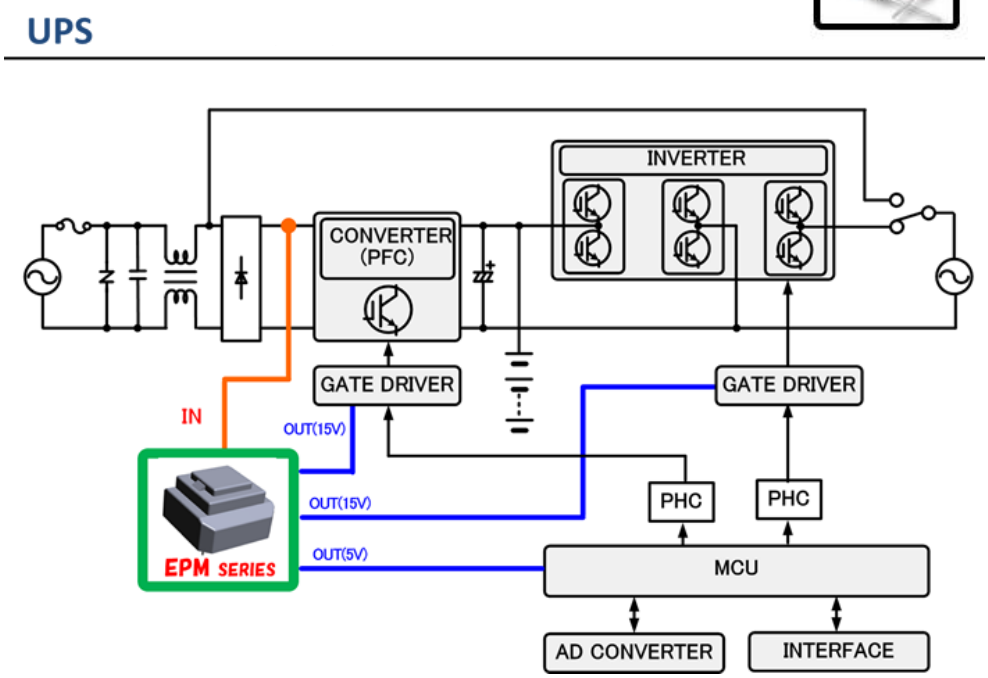
Application : UPS

Features

The UPS provides back-up power for Servers, large-scale network and other critical systems during power interruption or power failure conditions. Voltage stored in the UPS built-in battery pack supply power to an inverter equipped with DC boost circuit during power outage or failure conditions. Continued miniaturization of UPS systems require compact component design and low-noise and high efficiency operation. The power module can be used to provide DC power required for the inverter and for the microcontroller and other internal electronics. The low noise operation of the power module insures quiet as well as energy-saving high efficiency operation.

Block diagram



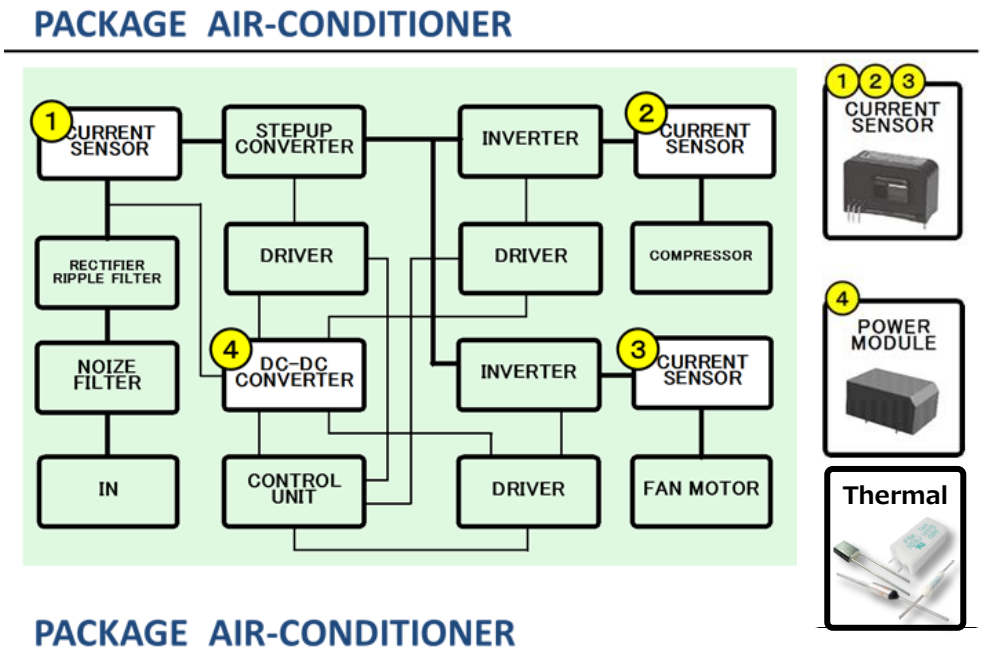


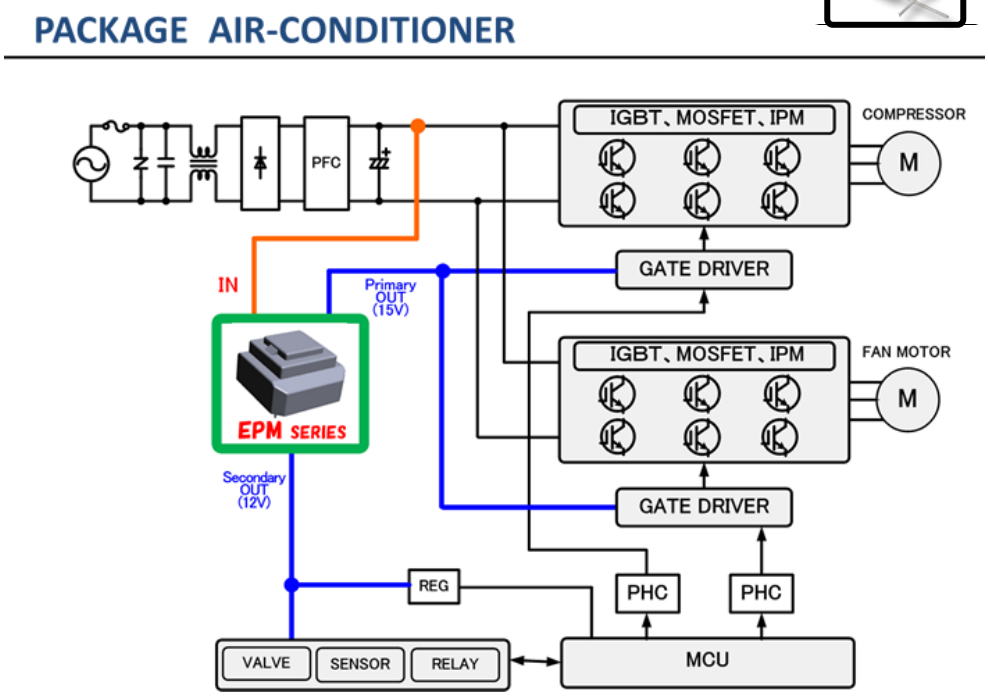
Application : Package Air-Conditioner

Features

Air conditioning systems must, at times, maintain nearly constant operation. An inverter with PFC boost circuit for harmonic suppression is used to drive the fan motor and compressor in the package AC system. The power module can be used to provide DC power required for the inverter and for the microcontroller and other internal electronics. We have developed a power module to provide peak current required for 2 and 4 way solenoid valves used for outdoor unit in extreme temperature conditions. The low noise operation of the power module insures quiet as well as energy-saving high efficiency operation.

Block diagram



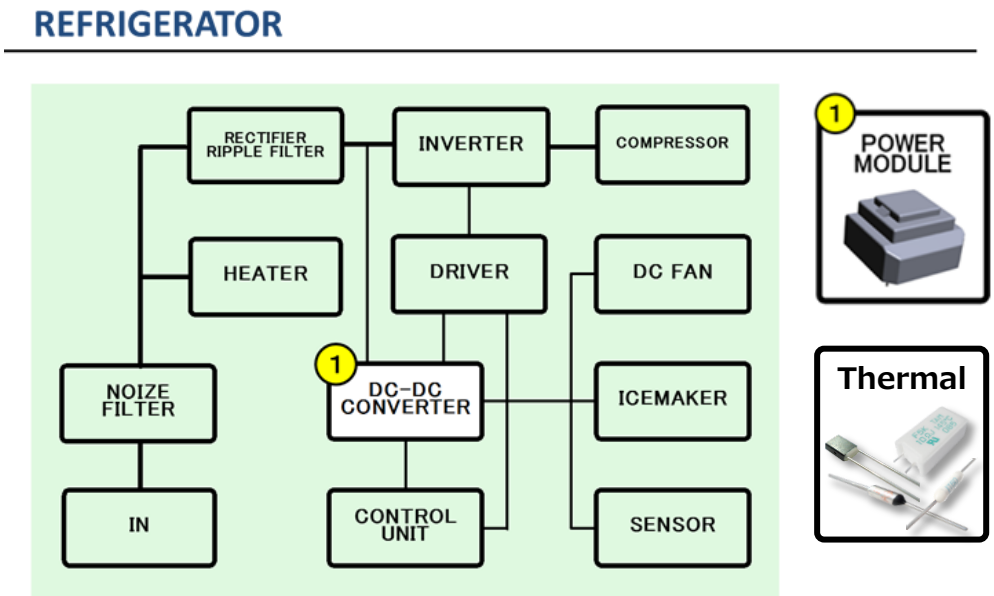


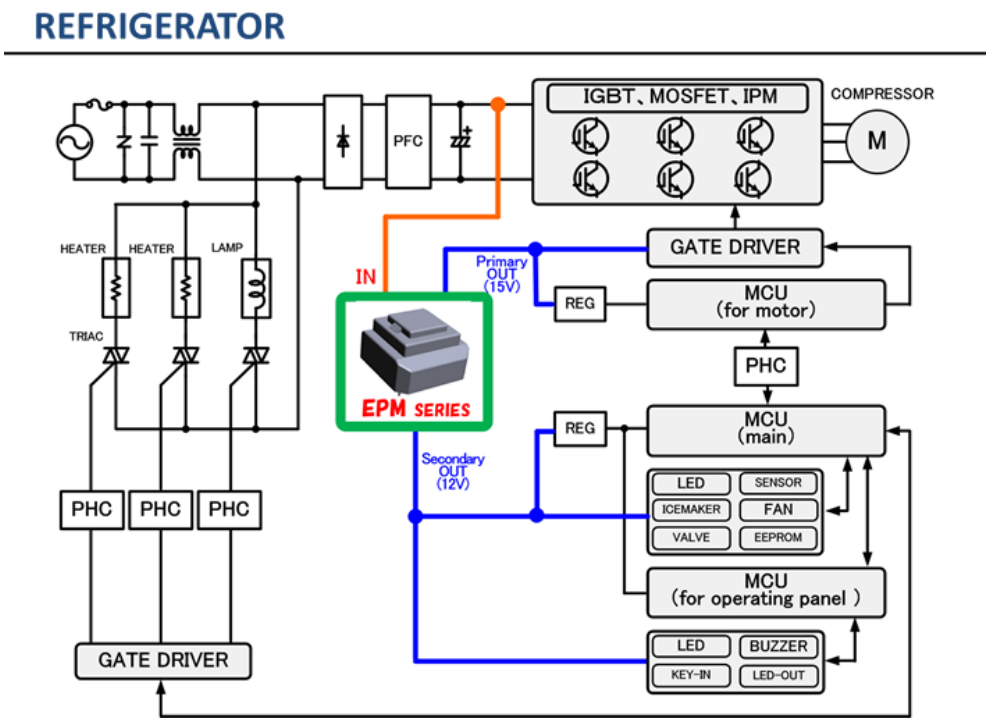
Application : Refrigerator

Features

Refrigerators are required to maintain constant duty operation. High efficiency is necessary to insure low energy consumption. The compressor is operated by an inverter with a PFC boost circuit for harmonic suppression. The power module can be used to provide DC power required for the inverter and for the microcontroller and other internal electronics. The low noise operation of the power module insures quiet as well as energy-saving high efficiency operation.

Block diagram



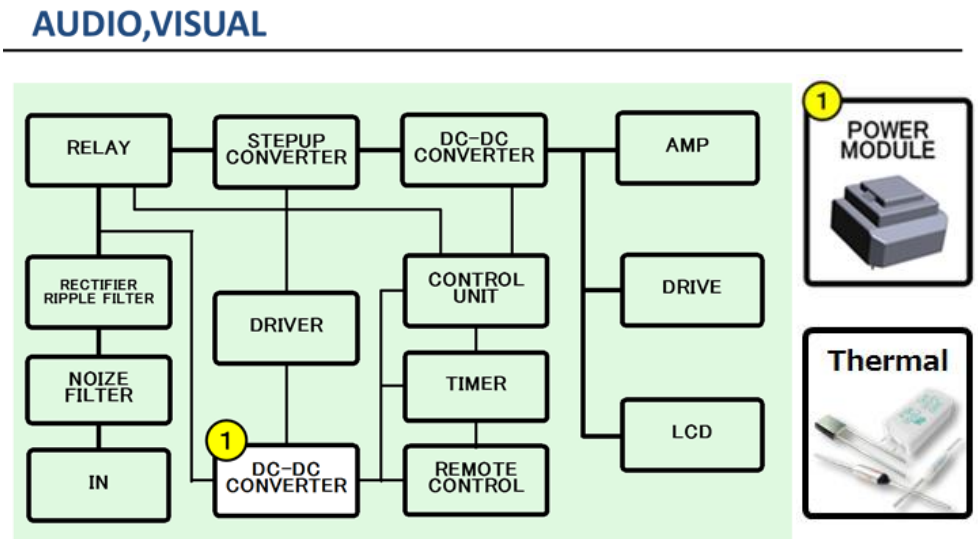


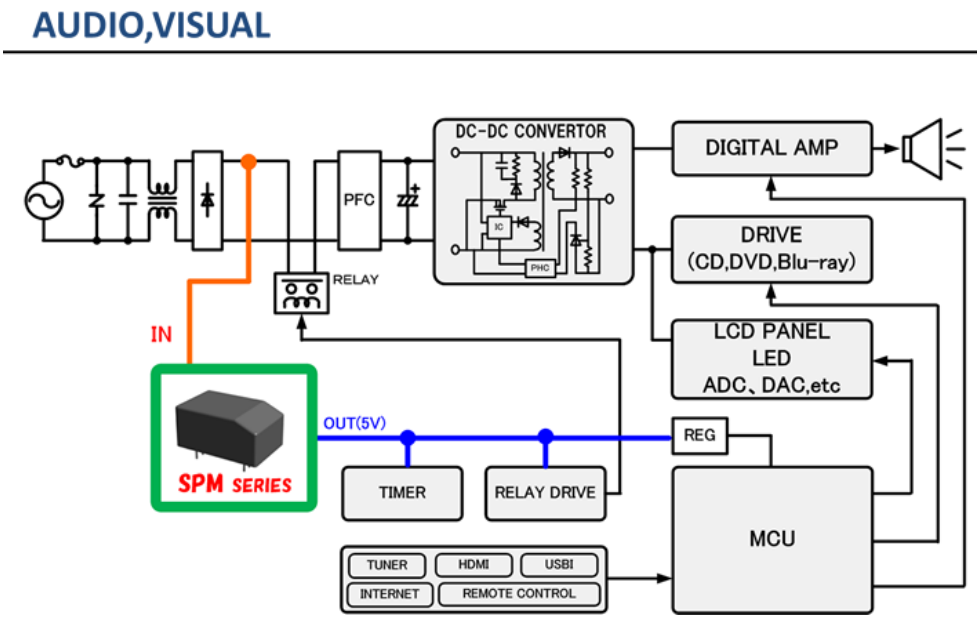
Application : Audio, Visual

Features

Consumer Audio-Visual Electronics like LCD TV are subjected to heavy daily usage requirements in both operating and standby operational modes. The power module provides a high efficiency-low noise standby mode for standby power needed to maintain internal electronics and remote control function resulting in energy savings for consumers.

Block diagram



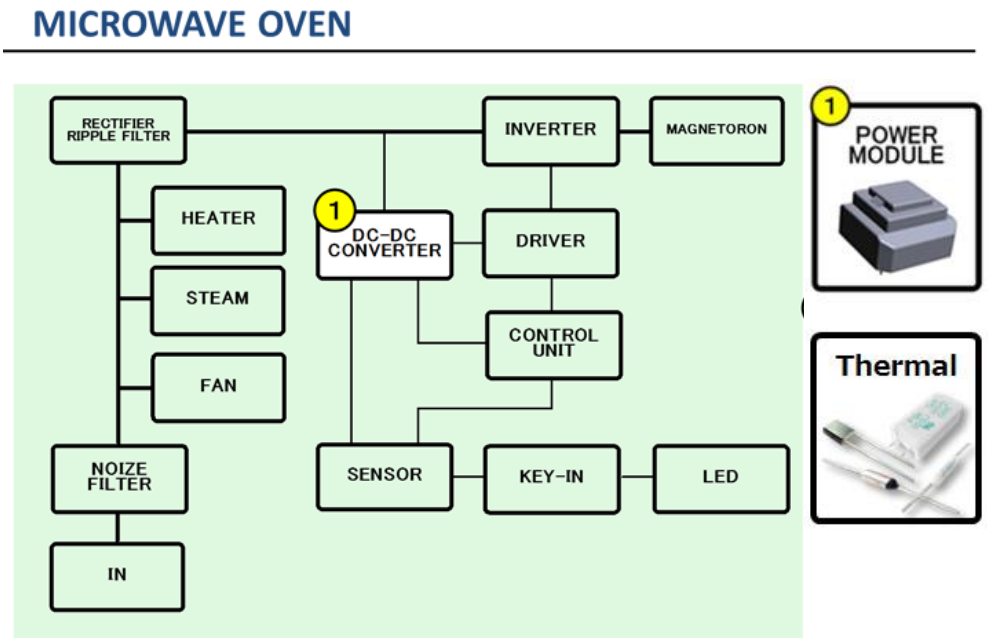


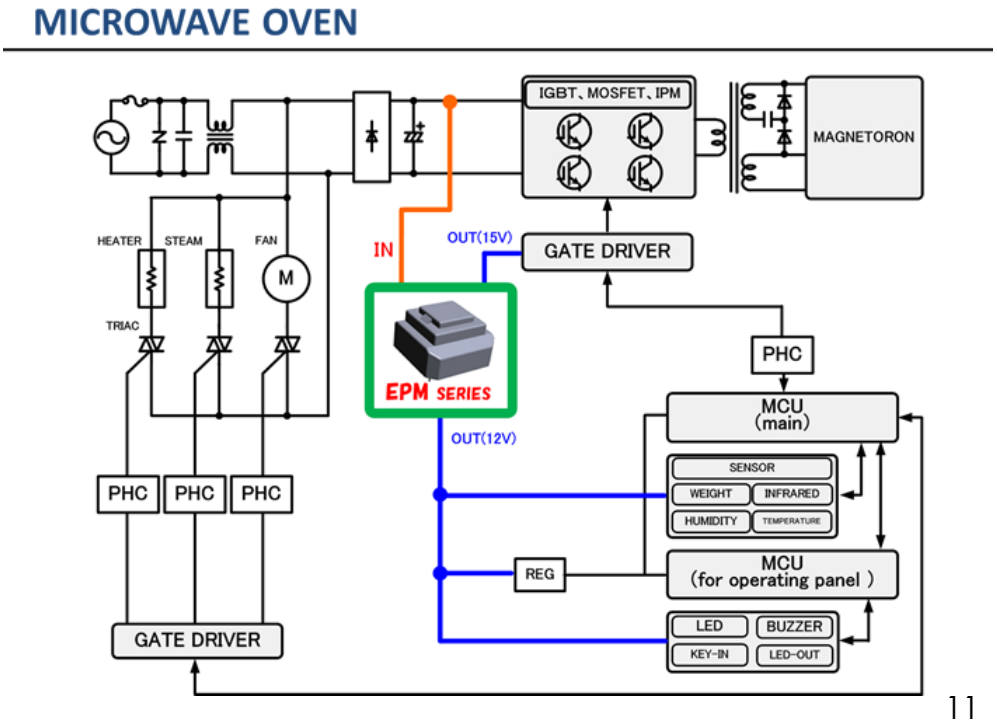
Application : Microwave Oven

Features

High-frequency micro-wave radiation generated by a 2450MHz magnetron generates frictional heat due to the vibration of water and food molecules. Newer high-end microwave ovens utilize advanced external heating process. In either case Tamura power module can be used to power microcontroller, inverter, and other system electronics as well as provide low-noise standby power when the microwave is not in use giving energy-saving high efficiency operation.

Block diagram





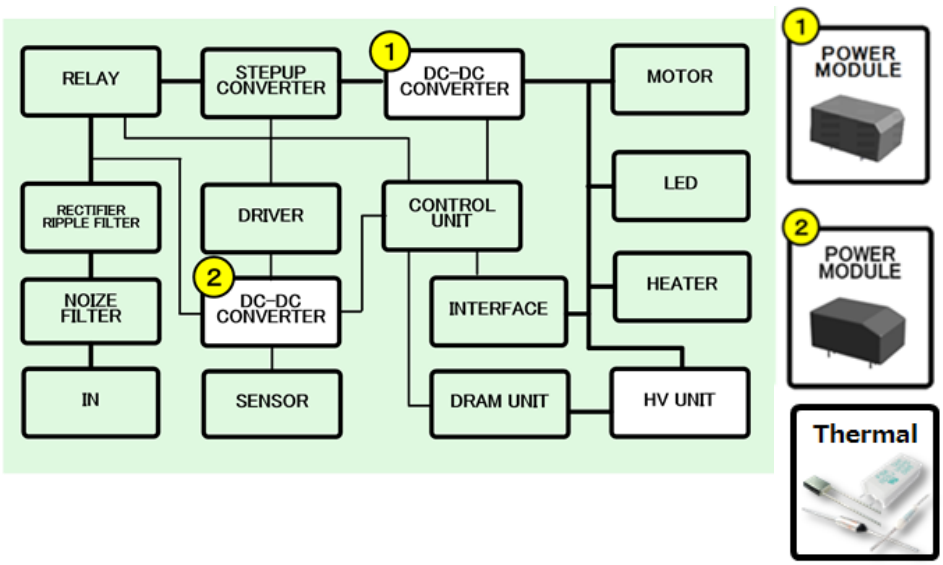
Application : OA

Features

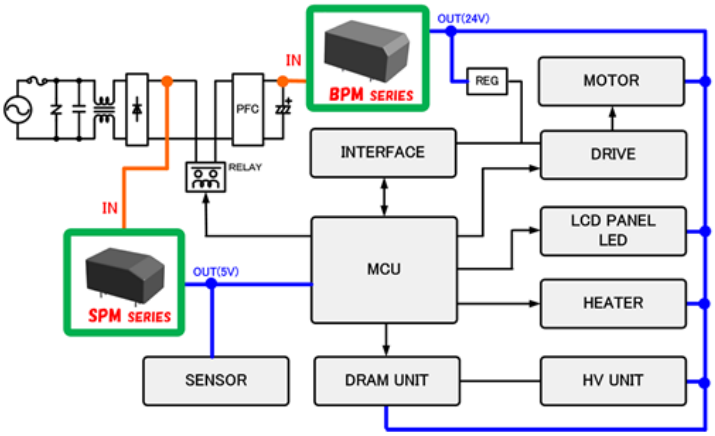
High speed-high definition Multi-Function Printers (MFP) and other highly complex, network-enabled, office automation equipment offer improved performance and low-noise operation. The MFP contain numerous DC motors for scan, drum, paper-feed and polygon mirror operation requiring 24VDC power. In addition the control electronics – microcontroller, sensors, motor-drive, and, data-processing components require high-current 5VDC power supply for operation. When not operating the MFP must enter a standby mode to minimize energy consumption. Tamura power module product line-up required by today's office automation equipment with 24VDC and high-current 5VDC output voltages including standby mode. The small form-factor is highly efficient, low noise modules provide the reduced size and energy-savings for today's complex office machines.

Block diagram

OA (PRINTER)



OA (PRINTER)



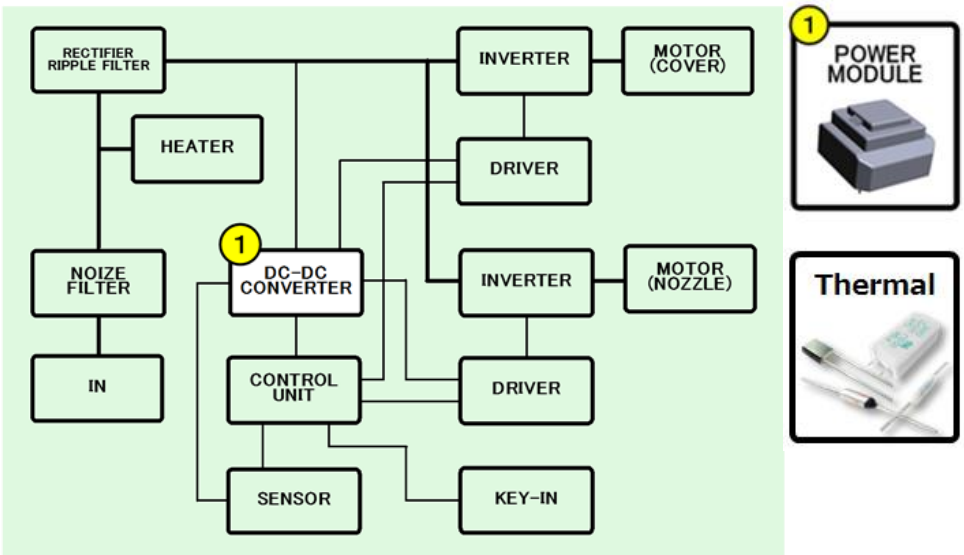
Application : The toilet-bidet

Features

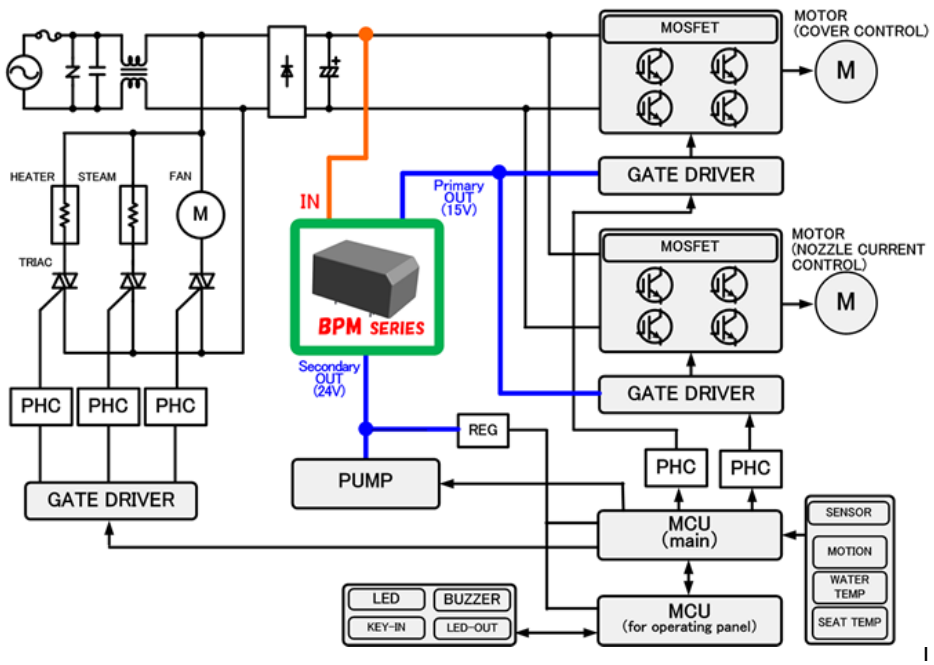
Very popular in Japan, the warm-water wash toilet-bidet is becoming popular throughout Asia and abroad. Primarily in a standby mode the toilet-bidet requires stable power system with low-power mode of operation. Sensors in the toilet seat detects user and prepare for warm water operation condition. The power module can be used to provide stable power to the microcontroller, inverter, and other system electronics as well as provide low-noise standby power when the toilet-bidet is not in use giving energy-saving high efficiency operation.

Block diagram

The toilet-bidet



The toilet-bidet

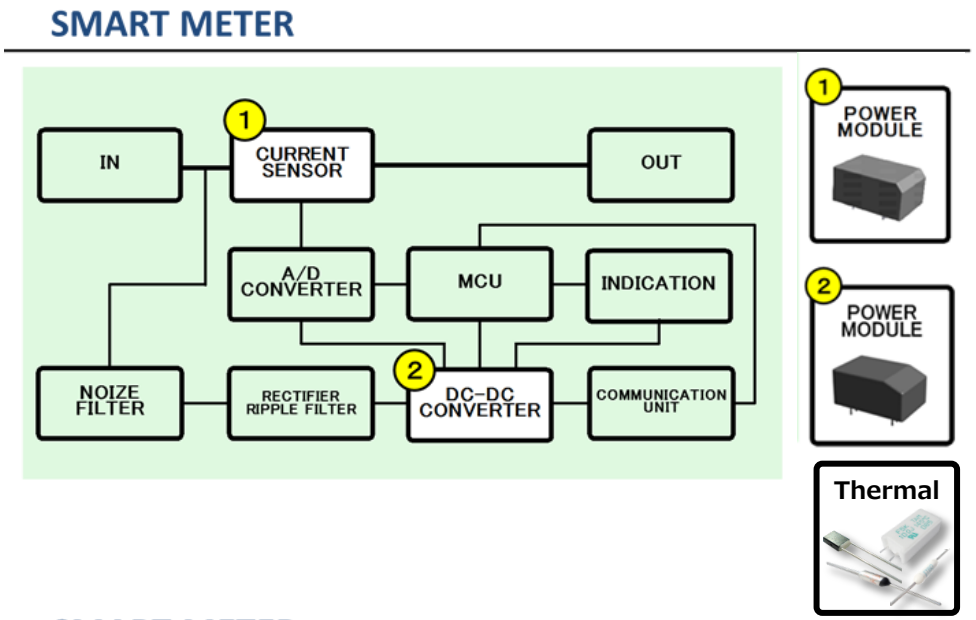


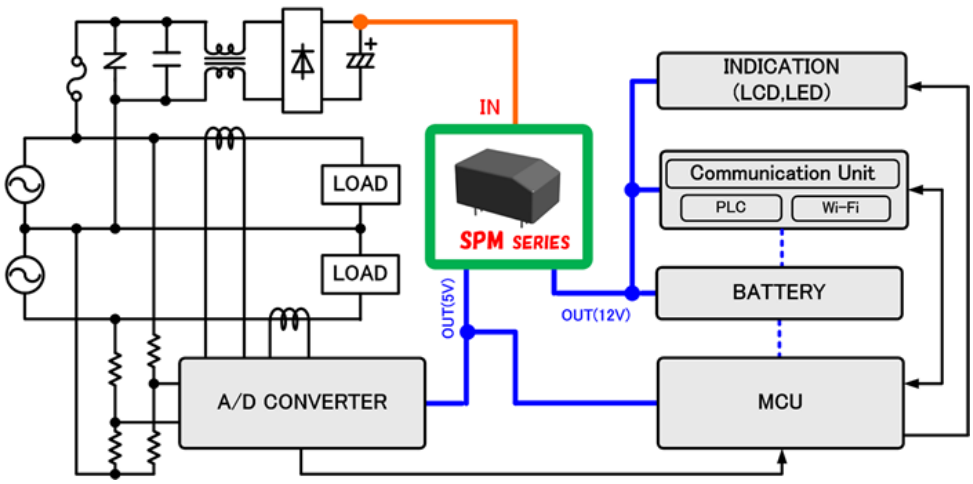
Application : Smart Meter

Features

Smart meters are used to measure and control power in home and office area networks. The smart meter allow remote monitoring by utility companies and smart home/office area systems to monitor and control energy usage and to send power consumption data to allow for optimized system. The power module provides stable DC power required to operate the smart meter microcontoller and other digital electronics. The low-noise, high-efficiency of the power module including high lightning surge resistant design provide for the high reliabilty performance of the power module in smart meter applications.

Block diagram



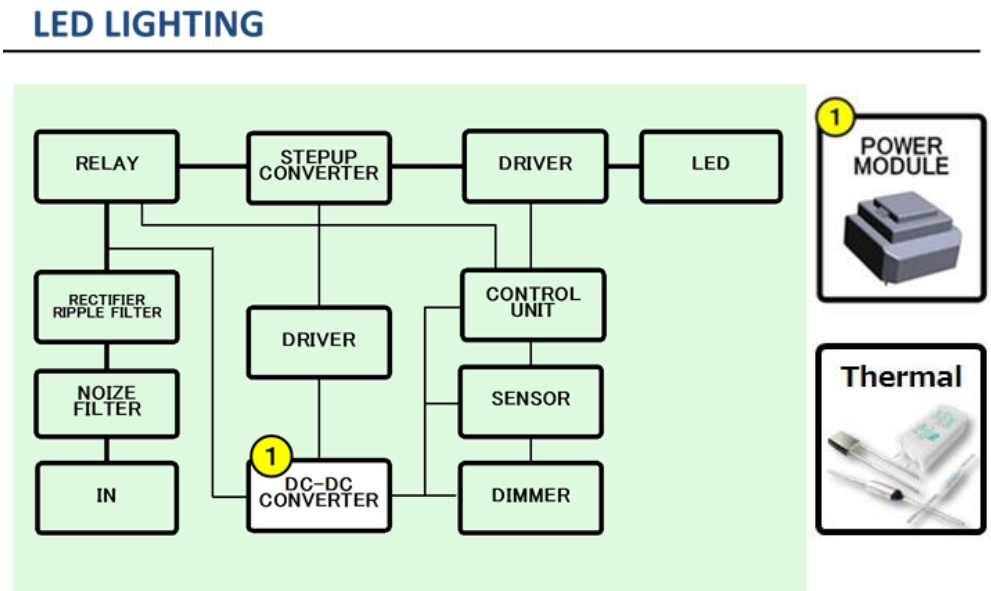


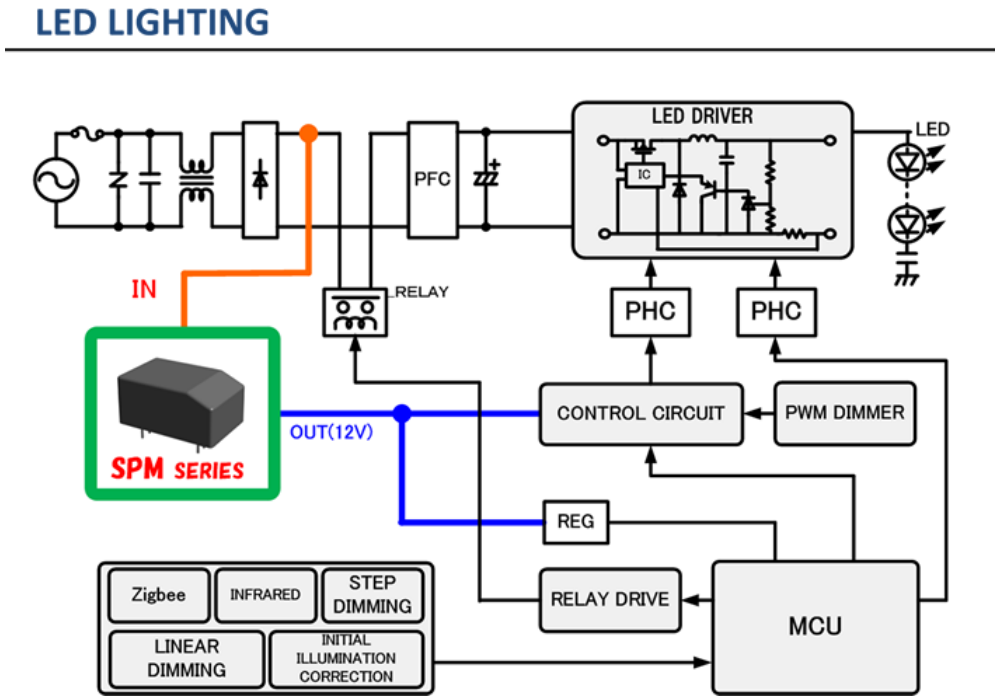
Application : LED Lighting

Features

The energy-saving performance provided by LED lighting has resulted in a rapidly expanding market for LED lighting systems. These high-performance LED lighting systems have various functions for safety and comfort including dimmer, toning, motion detection, illumination correction and radio control. These features require a constant current power supply to insure proper operation. The power module with as a constant voltage source can be used to create a stable constant current converter for the LED lighting system for both operating and non-operating conditions thus insuring stable operation and energy-conservation even when the LED lighting system is off.

Block diagram





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Thank you!!