# 2.7 Power System

The power system of this camera is at both the camera head and BS/CCU. The use of each power system changes according to the use of the camera head.
The HEAD POWER system operates with the power sent from the BS/CCU POWER system via camera cable.

## (1) BS/CCU POWER System

The BS/CCU POWER system consists of the PWR CTRL module, REG BOARD-1, REG BOARD-2, DRIVE BOARD, PS CTRL module and BS AUDIO module of the BS/CCU unit.
The BS/CCU POWER system supplies DC power required in the BS/CCU while power (AC 220V) is supplied from the commercial power supply to the HEAD POWER system via transformer.

When the power switch of the BS/CCU is turned ON, low-voltage (AC 27.5V) is supplied to the HEAD POWER system. At this point, each sensor operates to determine whether or not it is OK to supply high voltage (AC 220V) to the HEAD POWER system. If it is OK, the POWER CONDITION lamp (green) in front of the BS/CCU lights and high voltage AC is supplied to the HEAD POWER system. If it is not OK yet, high voltage AC is not supplied to the HEAD POWER system.
The following items are detected to determine that high voltage AC can be supplied or not

- Break and disconnection of camera cable (∗)
- Camera cable short-circuit (∗)
- Correctness of the connected camera head type.
- Status of the camera head power switch (∗)
- Status of the camera send power switch in front of the BS/CCU (∗)

(∗) indicates that it is always monitors even during operation

When an error is detected on these items, the BS/CCU POWER system immediately automatically stops supplying high voltage AC. Also, the aforementioned POWER CONDITION lamp goes off.
If the error is related to the camera cable, the OPEN (red) lamp or SHORT (red) lamp in front of the BS/CCU lights. If the fan that cools off the entire BS/CCU stops, the FAN ALARM (red) in the front panel lights. Further detailed information can be seen on the diagnosis (self-diagnosis) display activated by pressing the PM IND / PAGE switch on the OCP.

### ■ Items Displayed on the Diagnosis Display

- Break, disconnection and short-circuit of camera cable
- Status of camera send power switch on the camera head and in front of BS/CCU
- Correctness of the connected camera head type.
- Tap UP / DOWN control status of the BS/CCU transformer
- Tap No. of the BS/CCU transformer
- Status (High / Low) of the commercial power supply sent to the BS/CCU
- Stop of the BS/CCU fan

The tap of the transformer of the BS/CCU POWER system is switched to maintain the voltage supplied to the HEAD POWER system at a constant level. The tap is automatically switched by the instruction from the HEAD POWER system.

- **POWER CTRL Module**

  The POWER CTRL module performs remote control of the power supply for the entire BS/CCU. The power ON / OFF of the entire BS/CCU is performed in the way that a DC 5 V is created from the commercial power supply passed the MAIN POWER switch to drive the driver and controls the main triac.

- **REG BOARD-1 and REG BOARD-2**

  REG BOARD-1 and REG BOARD-2 are the DC/DC converter to generate +5.5V, –5.5V, +8.5V, +25V, +3V used in the BS/CCU from DC 12V created by the AC/DC converter.

- **DRIVE BOARD**

  The DRIVE BOARD serves as the transformer tap selector of high voltage AC supplied to the camera. The line of the tap No. instructed from the PS CTRL module explained in the later section becomes active.

- **PS CTRL Module**

  The PS CTRL module controls high voltage AC supplied to the camera. Information or commands such as broken, disconnected or short-circuited camera cable, status of the power switch of the camera head and BS/CCU, camera judgment signal, tap UP / DOWN are all input into this module and power transmission ready or not and tap No. are determined. Power transmission ready or not is output to the relay and DRIVE BOARD and the tap No. is output to the DRIVE BOARD. In addition, the status of the cable or power supply is informed to the BS MPU module using Serial to Parallel conversion.