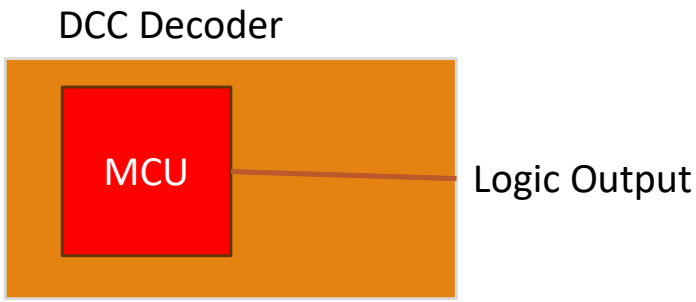
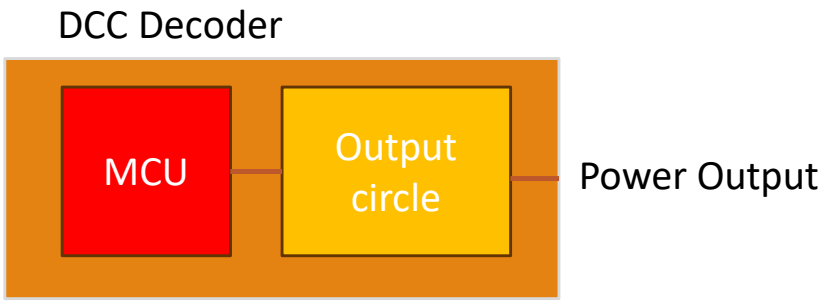
DCC Decoder Output Description

Decoder output type

Divided into the following two types.

- Logic output.
- Power output.





Logic output

The logic output is directly output from the decoder's main control unit IC (MCU) pin.

Logic outputs are usually used as signals and are not recommended to be connected directly to a load because the output current is usually only a few mA, which is not enough to drive the load.

To use the logic output to drive a load such as a light bulb, you need to connect the logic output to an external output circuit and then connect the load.

The logic output is directly connected to the MCU output. If it is connected to an excessive load, the output may exceed the load and the MCU may overheat and burn out.

Because the logic output current is very small, the decoder manual does not indicate the logic output current.

The logic output can usually only accept the operating voltage of the MCU, usually 5V or 3.3V. If the load voltage is too high, it will directly burn the decoder.

Power output.

The power output is already connected to a set of output circuits in the decoder, so it can provide a larger current output.

The power output in the decoder manual will indicate the current that can be connected to the load, which may be tens of mA to hundreds of mA.

Load type

Lighting: LED, tungsten filament lamp, etc. Tungsten filament lamp requires a larger current.

When the smoke generator generates smoke, it needs to heat up and ignite the smoke oil to produce smoke, which requires a large current supply.

Vehicle electric disconnector requires instantaneous high current when the disconnector is activated.

DT200 DCC Test Board

The decoder output does not specify which outputs are logic outputs or power outputs. Decoder manufacturers may mix logic outputs and power outputs for cost and design considerations.

Serious output usage errors can cause the entire decoder to burn out.

The DT200 test board can distinguish which pins of the decoder are logic outputs and which are power outputs, Avoid output usage errors.