# MODULE D'ISOLATION DE SIGNAL ANALOGIQUE POUR CAPTEURS GRAVITY DFR0504

INTRODUCTION

In many cases, electrical isolation is required to ensure the reliable operation of the sensors. Some sensors, such as pH sensors and conductivity sensors, will interfere with each other and do not measure properly in the same container when they connect to the same power. To ensure stable and reliable operation of the sensors with no interference, it is necessary to isolate the signal and the power.

Gravity: Analog Signal Isolator is efficient in preventing the electrical interference between sensors. **This module has an onboard 5V isolation power which could directly supply to the sensor.** Therefore, you do not need to prepare the external power, such an easy and practical! The connector of wires are special designed for DFRobot 3Pin analog sensor, plug and play, no need for soldering. The analog signal transmission ratio is 1:1, which contributes to a very small impact on output signals of sensors when this module connect into the circuit. Furthermore, you do not need to change the code of the mainboard.

This analog signal isolator is applicable to prevent interferences between sensors, such as a multi-parameter water quality monitoring system that need to prevent interferences between water sensors.
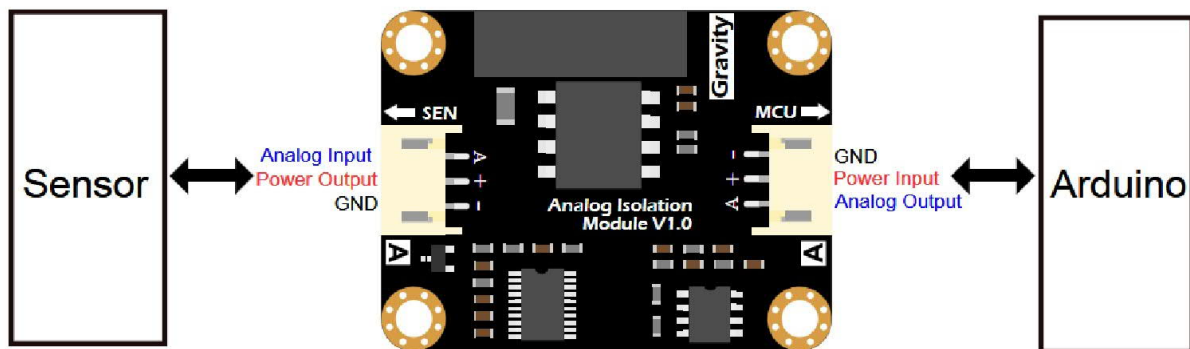
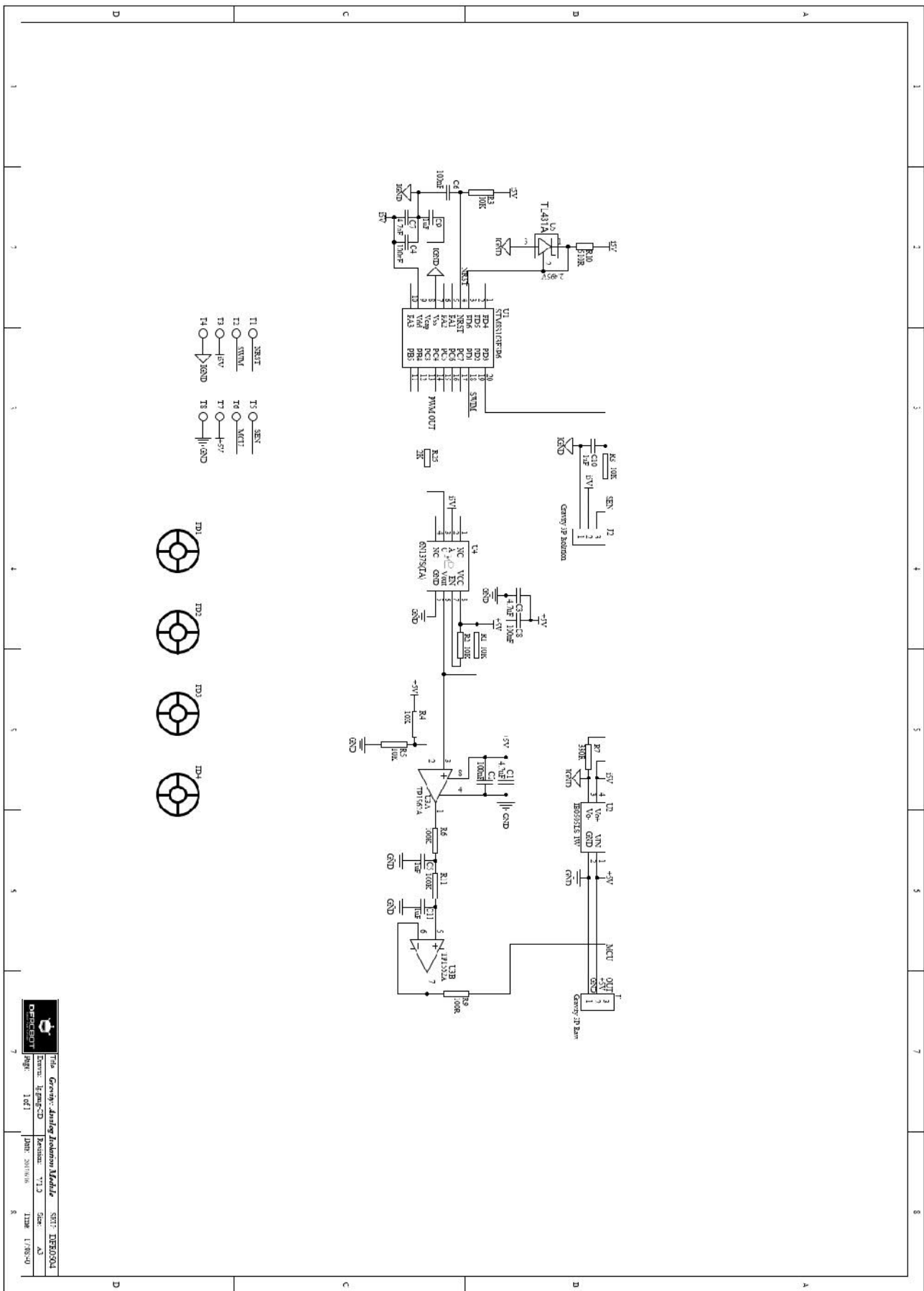
Gravity: Analog Signal Isolator Interface

This product is almost compatible with all analog sensors produced by DFRobot. It could satisfy varied demands in situations that require electrical isolation.

- The MCU terminal (non-isolation terminal) should be provided with precise voltage of 5.0±0.1V. The higher the precision of input voltage, the higher the precision of analog output signal.

- This module consumes relatively large current during operation, so you'd better to provide external power supply to Arduino board to guarantee enough power and voltage precision.

- Please pay attention to the operating current of your sensor or module, the maximum output current from SEN terminal is 170mA.

- The GND of the MCU terminal(non-isolation terminal) and the GND of SEN terminal (isolation terminal) are isolated from each other. Do not short circuit them.

- It is normal for the isolator generates heat while working.

SPECIFICATION

- Operating Voltage: 5.0V

- Response Time: 4 seconds (Typ)

- Analog Error between Two Terminals: <± 20mV (Typ)

- Conector Type: PH2.0-3P

- No-load Current: 75mA

- Dimension: 42 * 32mm / 1.65 * 1.26 inch

- Non-isolation Terminal (MCU Terminal)
  Supply Voltage: 5.0 ± 0.1V
  Analog Output: 0 ~ 5.0V

- Isolation Terminal (SEN Terminal)
  Output Voltage: 5.0 ± 0.2V
  Analog Input: 0 ~ 5.0V

U1 STM8S11 F3P6

U4 6N137S(TA)

U3A TP1562A
U3B LP1562A

U2 TL431A

U3 B0505LS 1W

Gravity 3P Isolation
Gravity 3P Raw

T1 NRST
T2 SWIM
T3 +5V
T4 SGND
T5 SEN
T6 MCU
T7 +5V
T8 GND

LED1
LED2
LED3
LED4