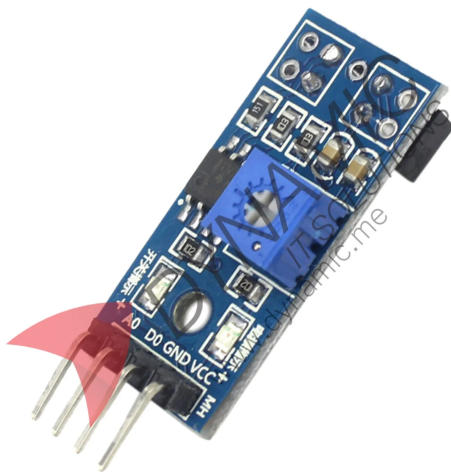


Infrared Line Tracking Sensor TCRT5000 Adjustable (4 pins)



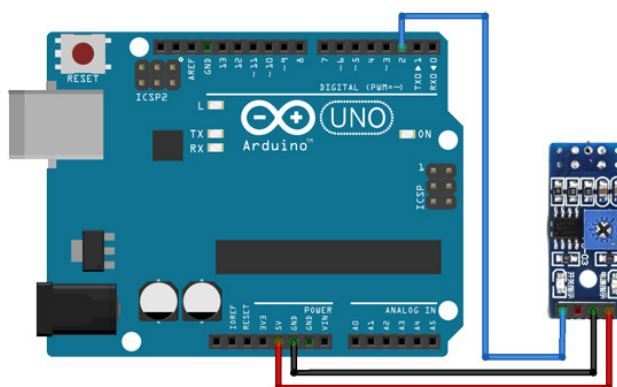
Features:

The TCRT5000 adjustable infrared line tracking sensor integrates an IR emitter and phototransistor within a single unit, combined with an LM393 comparator and onboard potentiometer for adjustable sensitivity. It blocks visible light to reduce environmental interference, and detects reflected infrared light to distinguish between surface contrasts, such as black and white. It outputs both analog and digital signals, making it suitable for microcontroller-based systems in line-following robots, object detection, and automation applications.

| Specifications | |
|-------------------------|---|
| Sensor Type | TCRT5000 reflective IR sensor |
| Operating Voltage | 3.3 V to 5 V DC |
| Output Type | Digital (DO: 0 or 1) and Analog (AO: variable voltage) |
| Detection Range | ~1 mm to 25 mm |
| Sensitivity Adjustment | Multi-turn precision potentiometer |
| Output Drive Capability | >15 mA |
| Indicators | Red LED (power), Green LED (digital output status) |
| Comparator IC | LM393 |
| Visible Light Rejection | Built-in IR filter housing |
| Dimensions | 32 mm × 14 mm |
| Mounting | Bolt holes for secure installation |
| Use Cases | Ideal for line-following robots, object proximity detection, speed monitoring, paper edge positioning, and motion detection in automation or security systems |

Pinouts:

| Pin Name | Type | Description |
|----------|----------------|---|
| VCC | Power Input | Supply voltage (3.3V to 5V DC) |
| GND | Power Ground | Common ground reference |
| A0 | Analog Output | Analog voltage proportional to reflected IR intensity |
| D0 | Digital Output | LOW when reflection exceeds threshold set via potentiometer |



Product Pictures:

