**Pivot project** Documentation

* Index:

1. Introduction.
2. Selector diagram and function.
3. PCB diagram and function
4. Wiring.

* Introduction:

Pivot project is about how to digitalize your farm and make contactless experience. You are now can manage your farm from anywhere in the world you can open, close , managing time , knowing errors …etc that will help you to improve your efficiency and saving water and power.

* System parts:

1. Controller PCB Part.
2. Selector Part.
3. Sprinkles PCB Part.
4. Gyroscope PCB Part.
5. Connectivity Part.

* Chart

  Description automatically generated with medium confidenceController Part:

**1.0 🡪** Generator relay and it is responsible for turning generator on and off.

**1.1 🡪** Relay responsible for turning pivot ON.

**1.2 🡪** Relay responsible for turning pivot OFF.

**1.3 🡪** Relay responsible for making pivot spinning in forward way.

**1.4 🡪** ReservedRelay.

**1.5 🡪** Relay responsible for making pivot spinning in reverse way.

**(1.6/1.7/1.8/1.9) 🡪** Relays responsible for controlling fertigation pump.

**(1.10/1.11) 🡪** Relays responsible for controlling Water pump.

**1.12 🡪** Relay to restart the whole system.

**(1.13/1.14) 🡪** Relays to over safety system.

**1.15 🡪** Relay for controlling pivot speed.

**1.16 🡪** Spare Relay.

**2.1 🡪** ULN driver for operating relays (1.1 🡪 1.8)

**2.2 🡪** ULN driver for operating relays (1.9 🡪 1.16)

**(3.1/3.2)🡪** Shift register for relays (0 🡪16).

**(4.1/4.2)🡪** Shift register for sprinkles relays.

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**5 🡪** MCU atmega32 and it will be replaced with atmega128 or STM.

**6 🡪** ESP32 for connectivity in case we don’t have Data logger PCB.

**7 🡪** RTC (Real Time Clock).

**8** 🡪 Input for 12V power.

**9 🡪** 3.3V output power.

**10 🡪** output spare power for 12V/5V.

**11 🡪** 5V power for Giro.

**12 🡪** Soft UART communication for Data logger PCB.

**13 🡪** 5V output power.

**14 🡪** 5V power for MIFI.

**15 🡪** 12V output power.

**16 🡪** SPI communication for water flow rate.

**17 🡪** 110V input for manual indicating.

**18 🡪** Output terminal for sprinkles relays.

* Selector Part:

![Table

Description automatically generated]()**0 🡪** 110V relay for generator controlling.

**(1, 2,.,8) 🡪** 110V relays for pivot controlling.

**9 🡪** 110V relay for switching between 5V(Battery) and 12V (110V generator).

**10 🡪** manual detection.

**11 🡪** For selection between manual and Auto.