

Dataset Description

The dataset consists of **15,169,480 data points** collected at **1Hz** from **February to August 2020** and is described by **15 features** from **7 analogue sensors (1-7)** and **8 digital sensors (8-15)**:

Analogue Sensors

1. **TP2 (bar)** – Measures the pressure on the compressor.
2. **TP3 (bar)** – Measures the pressure generated at the pneumatic panel.
3. **H1 (bar)** – Measures the pressure generated due to a pressure drop when the discharge of the cyclonic separator filter occurs.
4. **DV Pressure (bar)** – Measures the pressure drop generated when the towers discharge air dryers; a zero reading indicates that the compressor is operating under load.
5. **Reservoirs (bar)** – Measures the downstream pressure of the reservoirs, which should be close to the pneumatic panel pressure (TP3).
6. **Motor Current (A)** – Measures the current of one phase of the three-phase motor:
 - Close to **0A**: when the motor is off.
 - **4A**: when working offloaded.
 - **7A**: when working under load.
 - **9A**: when it starts working.
7. **Oil Temperature (°C)** – Measures the oil temperature on the compressor.

Digital Sensors

8. **COMP** – The electrical signal of the air intake valve on the compressor. Active when there is no air intake, indicating that the compressor is either turned off or operating in an offloaded state.
9. **DV Electric** – The electrical signal that controls the compressor outlet valve. Active when the compressor is functioning under load and inactive when the compressor is either off or operating in an offloaded state.
10. **TOWERS** – Defines the tower responsible for drying the air and draining the humidity removed from the air. Inactive when tower one is functioning; active when tower two is in operation.
11. **MPG** – Responsible for starting the compressor under load by activating the intake valve when the pressure in the APU falls below 8.2 bar. Activates the COMP sensor, mirroring the MPG sensor.

12. **LPS** – Activates when the pressure drops below 7 bars.
13. **Pressure Switch** – Detects the discharge in the air-drying towers.
14. **Oil Level** – Detects the oil level in the compressor. Active when the oil is below expected values.
15. **Caudal Impulse** – Counts the pulse outputs generated by the absolute amount of air flowing from the APU to the reservoirs.