

Asset Details

- Asset ID: PMP01
- Asset Name: Water treatment pump 1
- Manufacturer: Ebara
- Model: EVMSL64-5_2-30
- Rated Power: 30 kW
- Rated Voltage: 400 V
- Location: PUB Station Bedok

Performance Summary

- Data Period: 2025-10-01 to 2025-11-30
- Total Power Consumption: 24.5 MWh
- Daily Average Power Consumption: 401.6 kWh

Power Consumption (energy_kwh):

- Average: 23.2 kWh
- Minimum: 22.02 kWh
- Maximum: 28.33 kWh
- Standard Deviation: 1.28 kWh
- Trend: flat

Temperature DE:

- Average: 59.03 °C
- Minimum: 55.0 °C
- Maximum: 72.22 °C
- Standard Deviation: 3.53 °C
- Trend: flat

Temperature NDE:

- Average: 59.32 °C
- Minimum: 55.28 °C
- Maximum: 72.58 °C
- Standard Deviation: 3.55 °C
- Trend: flat

Vibration DE:

- Average: 3.89 mm/s RMS
- Minimum: 3.3 mm/s RMS
- Maximum: 5.55 mm/s RMS
- Standard Deviation: 0.46 mm/s RMS
- Trend: flat

Vibration NDE:

- Average: 3.97 mm/s RMS
- Minimum: 3.37 mm/s RMS
- Maximum: 5.66 mm/s RMS
- Standard Deviation: 0.47 mm/s RMS
- Trend: flat

Operational Status

All monitored signals exhibit flat trends over the reporting period. Power consumption remains stable with mean 23.2 kWh and low variability (standard deviation 1.28 kWh). Temperature readings at both DE and NDE bearings are stable with mean values of

59.03 °C and 59.32 °C respectively. Vibration levels at both bearing positions show 3.89 mm/s RMS (DE) and 3.97 mm/s RMS (NDE). Recent data from 2025-11-13 shows temperatures recorded values (72.22 °C DE, 72.58 °C NDE) and vibration peaks reaching 5.55 mm/s. The asset is operational with consistent performance across all monitored parameters.

Risk Assessment

Vibration Assessment per API 610: Average vibration levels of 3.89 mm/s RMS (DE) and 3.97 mm/s RMS (NDE) fall within the Preferred Operating Region (POR: 0.28 to 5.0 mm/s RMS). Maximum vibration peaks of 5.55 mm/s RMS (DE) and 5.66 mm/s RMS (NDE) exceed the POR threshold and enter the Allowable Operating Region (AOR: 5.0 to 6.5 mm/s RMS), indicating elevated but acceptable vibration levels during peak operation.

Temperature Assessment: Maximum temperatures of 72.22 °C (DE) and 72.58 °C (NDE) indicate elevated bearing temperatures during peak operation. Average temperatures of 59.03 °C (DE) and 59.32 °C (NDE) suggest normal thermal conditions during typical operation.

Power Consumption Assessment: Power consumption is stable with flat trend and low variability. Daily average of 401.6 kWh indicates consistent load operation.

Overall Risk: The asset operates within acceptable limits. Vibration excursions into AOR during peak operation warrant continued monitoring to prevent progression toward DANGER zone (6.5 mm/s RMS threshold). Elevated temperature peaks require attention to ensure bearing integrity. Stable power consumption indicates normal mechanical loading.