

# For Maintenance and Checking of Water Supply and Sewage Systems

## Have you ever wished you could do this?

Perform onsite pump vibration checks and power supply checks when pumps are not operating normally.

Record controller output and control valve operations during periodic maintenance.

Capture fluctuations in the quality of a controller power supply when peripheral equipment (pumps, motors, regulator valves) is being powered.

## Yokogawa's OR100E/OR300E provides all of these features:

### • Compact ( B5 notebook size), Light weight , and Portable

Weighing only 1.4 kg, the OR100E/OR300E is easy to carry. In addition, the unit can be powered by batteries which makes the OR100E/OR300E perfect for field maintenance work.

### • Simultaneously measure up to four analog signals and eight relay logic signals.

The OR100E/OR300E features up to four isolated input channels and eight logic inputs. These features are useful when analyzing the correlation between powered peripheral equipment and main power quality on a controller.

### • Maximum 500 Vrms and 400kS/s sampling rate

The OR100E/OR300E supports a wide range of applications, from continuous monitoring of DC voltages to the recording of noise and ripples superimposed on standard signals and power supply waveforms. The OR100E/OR300E can be used as either a recorder or an oscilloscope.

### • Power Supply Abnormality Monitoring Trigger

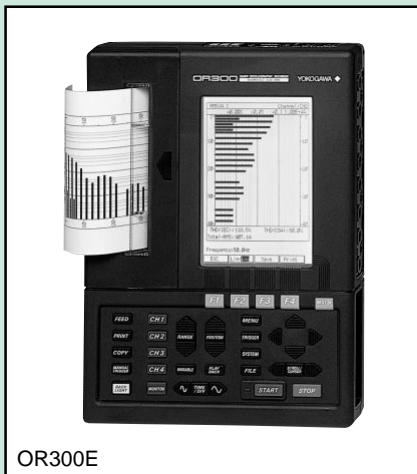
The OR100E/OR300E features a wave window trigger that allows the recorder to monitor and detect power supply abnormalities such as utility power supply failures, impulse noise, load fluctuation, and frequency fluctuations. The wave window trigger makes it easy to recognize correlation between power problems and the malfunctions in peripheral equipment.

### • PC Card and ACRAWin32 (PC Software)

Data can be automatically saved to a PCMCIA Card or data can be transferred remotely via modem to a PC where historical data can be analyzed. The data files can be converted and save as ASCII, Lotus, or Excel formats.

### • Harmonic analysis function (OR300E)

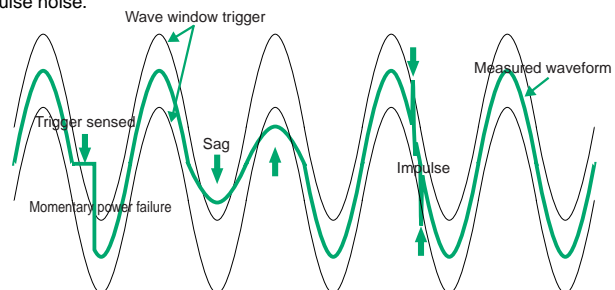
The harmonic analysis function allows the OR300E to analyze power supply harmonics up to the 40<sup>th</sup> order from the fundamental wave. This makes it possible to monitor the fluctuations in the harmonic noise level after a controller has been installed, and to detect and analyze problems caused by harmonic noise.



OR300E

### Power Supply Abnormality Monitoring Trigger (Wave Window Trigger)

The OR100E/OR300E lets you set a wave window trigger on a reference waveform based on an actual power supply waveform. Power supply abnormality monitoring is sensed if the signal being measured goes outside of the set window. This feature is useful for real-time monitoring of momentary power failures in an UPS, voltage and frequency fluctuations, and impulse noise.

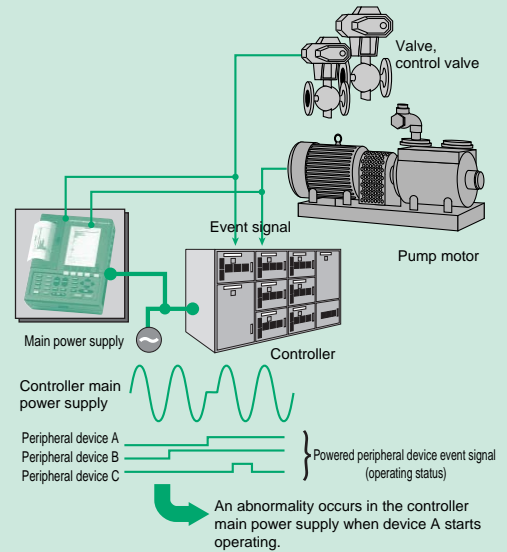


## Monitoring controller power supply quality

The OR100E / OR300E can monitor and record the correlation between the quality of the main power supply for a controller and the operating status of powered peripheral equipment. The effect that peripheral equipment (e.g. general-purpose valves, solenoid valves, and regulators) has on the main power supply can be analyzed. Based on analysis, steps can be taken to improve the quality of the power supply.

### OR100E/OR300E features

- Small, light, and battery operated.
  - Simultaneous measurement on four analog channels and eight event signal channels.
- All channels are isolated so there are no ground potential problems.
- The power supply abnormality monitoring trigger makes it possible to reliably capture abnormalities in the main power supply waveform. Measurements before and after a problem are stored in internal memory.



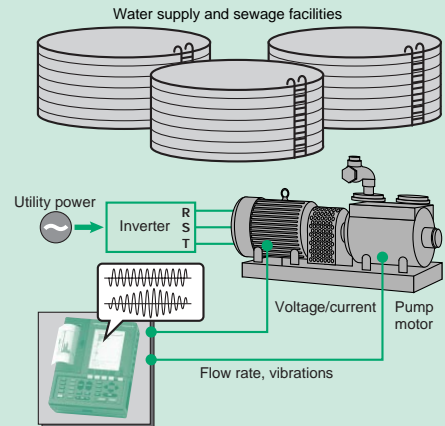
## Pump maintenance and checks

Pump maintenance at water supply and sewage facilities

- Pump motor voltage and current waveform monitoring
- Flow rate and pulsation monitoring
- Vibration observation

### OR100E/OR300E features

- Small and easy to carry for easy maintenance of pumps spread out over a site
- Battery powered to eliminate AC interference
- High sampling rate (400 kS/s) for measurement of power supply waveforms and vibration waveforms
- Harmonic analysis function for measurement of harmonic noise during pump operation



## Field maintenance of valves

Use the OR100E and OR300E to adjust and check field equipment.

Step response tests on valves, solenoid valves, and regulators. Valve operation characteristics when control signal is varied in steps (for measurement and adjustment of time constant and overshooting)

### OR100E/OR300E features

- Small and easy to carry for easy maintenance of equipment spread out over a site
- Battery powered to eliminate AC interference
- Four isolated input channels
- High frequency response and 11-bit A/D resolution for accurate measurement of overshooting

