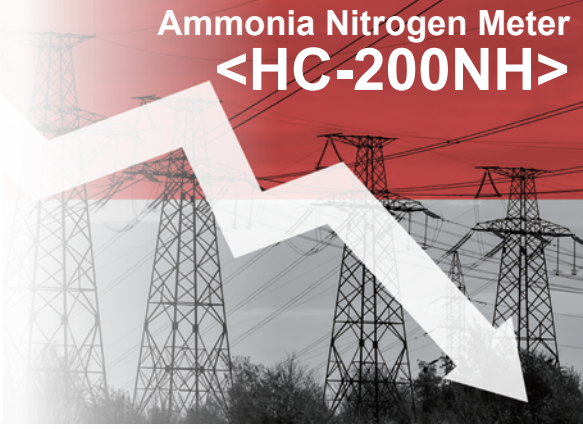
HORIBA

Ammonia Nitrogen Meter
<HC-200NH>



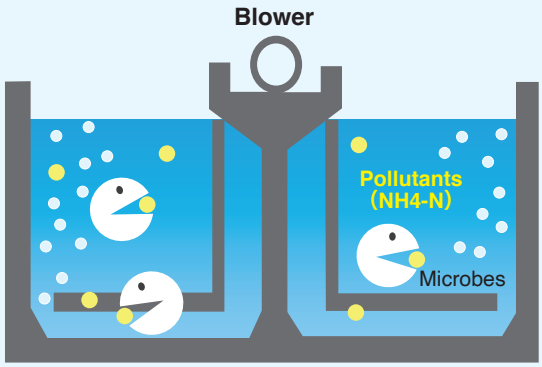
Are you troubled by high energy costs for aeration?

Would you like to
“reduce power consumption”
by using water quality meters (NH_4&DO)? *1

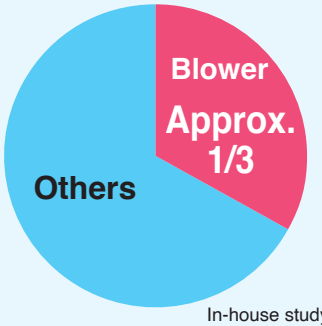
This could be achieved by using ammonia-based aeration control to optimize the air supply.

Power consumption in a biological reactor

Microbes are activated to decompose the pollutants by providing air supply.



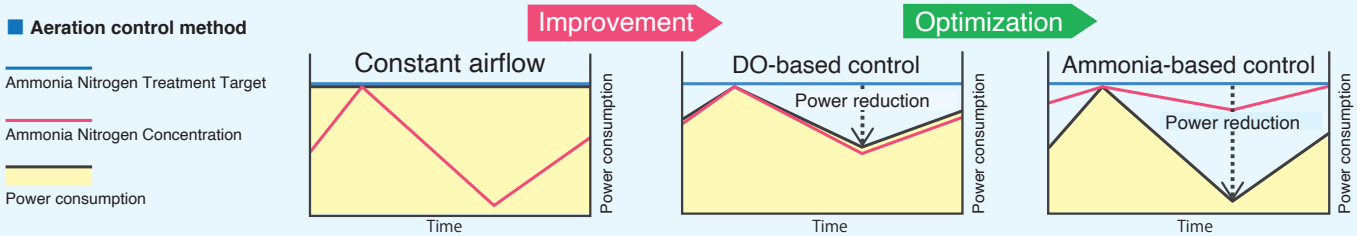
The power consumption of the blowers accounts for approximately one-third of the total energy consumption of the wastewater treatment facility.



In-house study conducted in 2017

Energy consumption of wastewater treatment plant (Estimate based on customer survey)

Reduction of energy consumption through ammonia-based aeration control



In constant air volume control, the air volume is regulated to a constant level in accordance with the maximum load caused by ammonia. As such, during periods of low load, excessive aeration occurs, resulting in wastage of power.

Controlling based on the DO value could help achieve control closer to the target ammonia nitrogen treatment value. However, since DO is an indirect indicator of pollutants, there is a possibility of excessive aeration when the load is low.

By implementing airflow control based on ammonia nitrogen measurement, it is possible to achieve optimal control that brings the system closer to the target value in accordance with the load, thereby contributing to reduced power consumption.

In some cases, the results of demonstration experiments show that power consumption can be reduced by **at least 10%**[*2*3] when compared to constant airflow control.

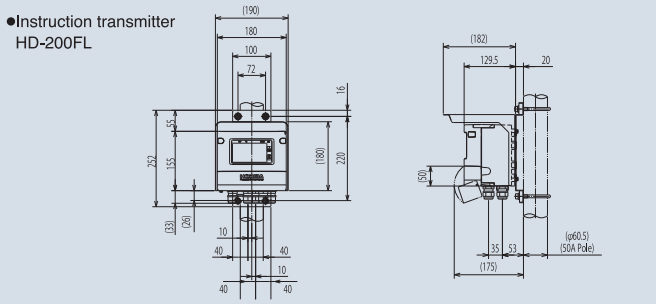
Depending on the control method and operating conditions, the power reduction effect may vary.

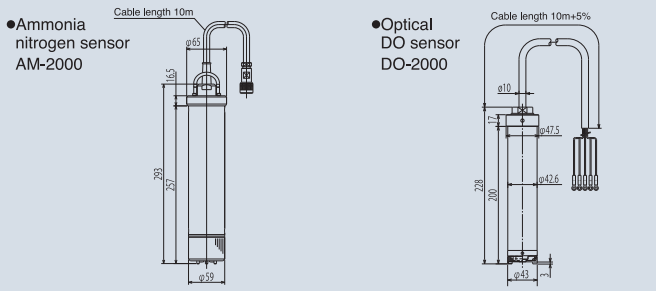
*1,2 Depending on the control method and operationg conditions, there may be cases where the reduction in power may not be significant.
*3 Reference: Japan Sewage Works Agency. (2019). Report on the Evaluation of Aeration Control Using NH4 Sensor. In R&D Annual Report 2019.

Instruction transmitter specifications

Model	HC-200NH
● Ammonia nitrogen meter specifications	
Combination sensor unit model	AM-2000
Sensor model	7691*: Ammonium ion chip, 7692*: Potassium ion chip for compensation, 7211: Reference chip
Measurement range	NH_4-N: 0~1000mg/L (display range: 0~2000mg/L) Temperature: 0~40°C (display range: -10~110°C)
Display resolution	NH_4-N: 0.01mg/L: 0.00~10.00mg/L 0.1mg/L: 0.0~100.0mg/L 1mg/L: 0~1000mg/L Temperature: 0.1°C
Repeatability	NH_4-N: ±3% (Reading) or ±0.2mg/L, whichever is greater(Standard solution) Temperature: ±0.3°C
Potassium ion compensation	Compensation range: Potassium ion concentration is not more than 10 times the ammonium ion concentration and under 1000mg/L Compensation error: ±20% (measured value)
Additional function	Adjustment with manual analysis (1 point), calibration curve input function (primary expression)
Self-diagnostic function	Correction error, sensor diagnostic error, transmitter malfunction
● Optical dissolved oxygen meter (optional)	
Combination sensor unit model	DO-2000
Sensor model	5700A: Sensor cap
Measurement range	Dissolved oxygen concentration: 0~20mg/L Display resolution 0.01mg/L Saturation degree: 0~200% Display resolution 0.1% Temperature: 0~50°C Display resolution 0.1°C
Self-diagnostic	Correction error, sensor diagnostic error, transmitter malfunction
● Transmitter common specifications	
Transmission output	3 points DC4~20mA input-output insulation type Maximum load resistance 900Ω Select 3 items from below Output range 1 : Ammonia nitrogen concentrtion : Configurable within measurement range. Output range 2 : Dissolved oxygen concentrtion : Configurable within measurement range. Output range 3 : Temperature reading of the ammonia nitrogen meter: Configurable within measurement range of -10~110 °C Output range 4 : Temperature reading of the dissolved oxygen meter: Configurable within measurement range of -10~110°C.
Operation temperature range	-20~55°C (Do not freeze)
Power	AC100~240V 50/60Hz Consumption power 28VA (max)
Structure	Outdoor installation type: Protection level IP65 Installation method: 50A pole or attached to wall Case: aluminum alloy Attachment bracket: Hood: SUS304
Weight	Unit: Approx. 3.5kg Hood, attachment bracket: Approx. 1kg
Compliance standard	CE Marking, FCC Rules

Dimensions drawing (unit: mm)





Detector specifications (Ammonia nitrogen meter)

Sensor unit model	AM-2000
Sample condition	0~40°C, pH4.0~8.5 [Na^+]: 0~100 times of [NH_4-N]
Measurement depth	10m
Wetted material	SUS316, FKM, PVC
Weight	Approx. 2.7kg (including 10m cable)

Detector specifications (Optical dissolved oxygen meter)

Sensor unit model	DO-2000
Measurement sample temperature	0~50°C
Measurement depth	10m
Wetted material	SUS316, NBR, PVC
Weight	Approx. 3.0kg (including 10m cable)

*Sensor7691 and 7692 : Store in low temperature (1~30°C)

IMS

The HORIBA Group adopts IMS (Integrated Management System) which integrates Quality Management System ISO9001, Environmental Management System ISO14001, and Occupational Health and Safety Management System ISO45001.
We have now integrated Business Continuity Management System ISO22301 in order to provide our products and services in a stable manner, even in emergencies.

Please read the operation manual before using this product to assure safe and proper handling of the product.

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