

# Vacuum Drying Oven

## DP200/300/410/610

Operating temp. range +40°C~240°C DP200/300 +40°C~200°C DP410/610

Operating pressure range 101~0.1kPa

Internal capacity 10L DP200 27L DP300 91L DP410 216L DP610

### Wide variety of compact and large scale ovens.

Designed with high accuracy controller system with advanced functionality and safety, vacuum storage ability and various options for system upgrade. Ideal for curing, annealing, baking, defoaming, hardening and deaeration treatments.

#### Operation and functions

- Shorter drying time and heat-up process with the new Z controller system resulting to faster heat up process (by 37% compared to previous models) and improved stability when operating at low temperatures.
- User-friendly control panel and display.
- Standard equipped with various operation modes ( fixed temp., auto-start, auto-stop, quick auto stop, program) and other support functions such as timer, calibration offset, power consumption / CO<sub>2</sub> emission monitor and power recovery mode.
- Option for input/output function (optional) 4-20mA analog output, external communication terminal (RS485), alarm output, operation signal, time-up signal, output port.

#### Safety Features

- Self diagnosis functions, independent overheating prevention & electric leakage breaker.



#### Specifications

Product code	212156	212157	212158	212159
Model	DP200	DP300	DP410	DP610
System	Vacuum drying by decompressed chamber direct heating			
Operating temperature range	+40~240°C		+40~200°C	
Operating pressure range*2	101~0.1 kPa (760~1 Torr) at absolute pressure			
Temp. adjustment accuracy*1	±1.0°C (at 240°C) JTM K05		±1.0°C (at 200°C) JTM K05	
Temp. Fluctuation*1	2.0°C (at 240°C) JIS C60068		3.0°C (at 200°C) JIS C6006	
Max. temp. reaching time*1	Approx. 60 min.	Approx. 120 min.	Approx. 80 min.	Approx. 100 min.
Interior material	Stainless steel			
Exterior material	Cold rolled steel plate baking coating			
Door	Single swing door			
Heat insulating material	Rock wool			
Heater	Mica heater, 0.68 kW	Mica heater, 1.05 kW	Mica heater, 2.25 kW	Mica heater, 3.15 kW
Vacuum gauge	Bourdon tube type, 0 to 0.1 MPa (Gauge pressure)			
Observation window	Tempered glass and polycarbonate resin plate			
Pump connection port / Purge port	18mm O.D. / Rc 1/4		NW25 flange / Rc 1/4	
Temp. control method	PID control by microprocessor			
Temp. setting method	Digital setting with UP/DOWN key			
Temp display method	Digital display by green LED			
Timer	0 min. to 99 Hrs. 59 min.			
Min. division	1 min. or 1 hour			
Operation function	Fixed temperature operation, Auto-start operation, Auto-stop operation, quick auto stop, program			
Additional functions	Calendar timer (max. 24 Hrs.), Integration time (max 65535 Hrs.), Time display, calibration offset, monitor display of total power consumption, total CO <sub>2</sub> emission and heater operating output, power recovery mode, storage and access of operator setting data			
Heater circuit control	Triac zero-cross control			
Temp. sensor	K-thermocouple (Double sensor)			
Safety device	Self diagnosis functions (Sensor, Heater, Triac, Automatic overheating prevention), Independent overheating prevention, Key lock function, Electric leakage breaker			
Leakage breaker	15A			20A
Independent cut-out circuit	Set temperature range: 0~270°C		Set temperature range: 0~230°C	
Internal dimensions (W×D×Hmm)	200×250×200	300×300×300	450×450×450	600×600×600
External dimensions(W×D×Hmm)	400×410×682	510×460×782	670×669×1500	820×819×1650
Internal capacity	10L	27L	91L	216L
Shelf rest step number (Fix)	3 steps	4 steps		
Shelf rest pitch	63mm	71mm	105mm	140mm
Power source (50/60Hz)	AC115V/AC220V Single phase with step-down transformer		AC220V Single phase	
Weight	Approx. 45 kg	Approx. 72 kg	Approx. 210 kg	Approx. 310 kg
Accessories	Shelf plate Punched stainless steel, 2 pcs			

\*1 Conditions: temperature and humidity: 23°C±5°C, 65%RH±20% (no load)

\*2 Ultimate pressure depends on the vacuum pump

Auto overheat prevention

Independent overheat protector

Self-diagnosis

Key lock

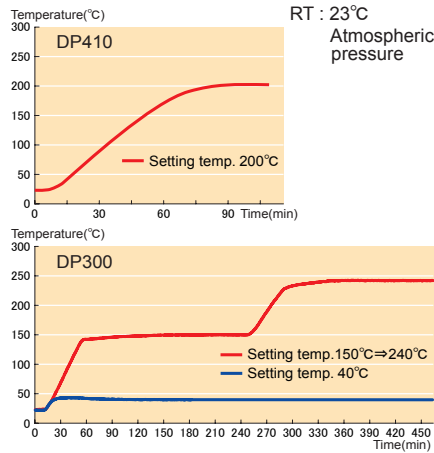
Power outage compensation

Overcurrent ELB

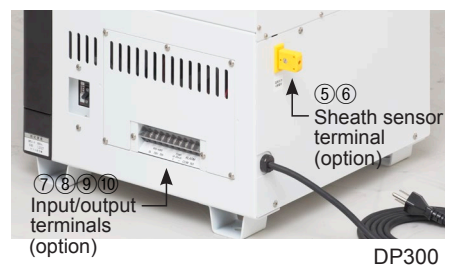
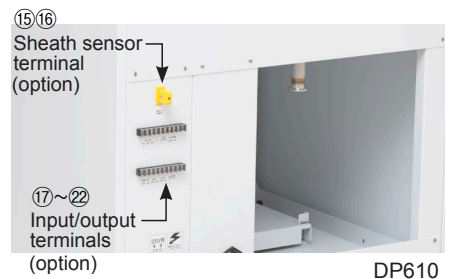
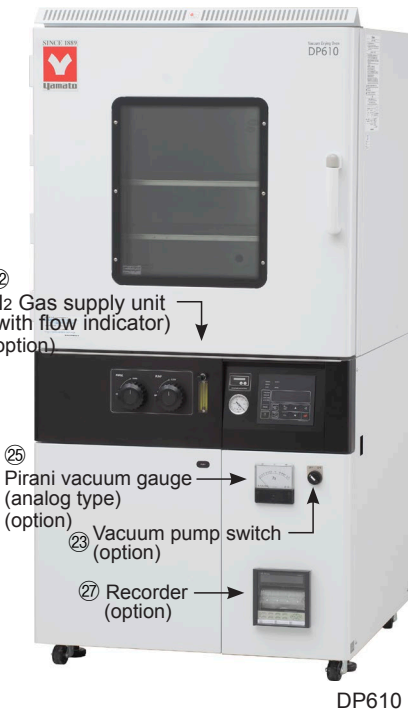
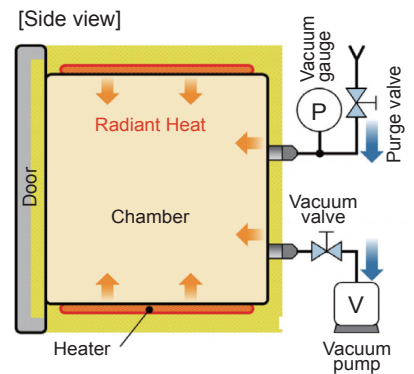
## Control Panel



## Temperature Characteristics



## Method



## Optional Items

No.	Description	Model No.	Product code
①	Stainless punching metal shelf (loading up to 15kg/shelf)	for DP200	- 212134
②	Stainless punching metal shelf (loading up to 15kg/shelf)	for DP300	- 212162
③	Stand	for DP200/DP300	ONS10 212079
④	*External communication adapter set	for DP200/DP300	OIN90 211880
⑤	*Sheath sensor(500mm)	for DP200/DP300	ODP36 281601
⑥	*Sheath sensor(1500mm)	for DP200/DP300	ODP38 281602
⑦	*External communication terminal (RS485)	for DP200/DP300	ODP24 281603
⑧	*Analog output terminal (4-20 mA)	for DP200/DP300	ODP26 281604
⑨	*External alarm output terminal (not selectable with ODP32)	for DP200/DP300	ODP28 281605
⑩	*Time-up output terminal (not selectable with ODP28)	for DP200/DP300	ODP32 281606
⑪	*Digital vacuum indicator	for DP200/DP300	ODP34 281607
⑫	Stainless punching metal shelf (loading up to 15kg/shelf)	for DP410	- 212192
⑬	Stainless punching metal shelf (loading up to 15kg/shelf)	for DP610	- 212193
⑭	*External communication adapter set	for DP410/DP610	OIN90 211880
⑮	*Sheath sensor (500mm)	for DP410/DP610	ODP36 281601
⑯	*Sheath sensor (1500mm)	for DP410/DP610	ODP38 281602
⑰	*External communication terminal	for DP410/DP610	ODP42 281608
⑱	*Analog output terminal	for DP410/DP610	ODP44 281609
⑲	*External alarm output terminal	for DP410/DP610	ODP46 281610
⑳	*Time-up output terminal	for DP410/DP610	ODP48 281611
㉑	*Operating signal output terminal	for DP410/DP610	ODP52 281612
㉒	*Event output terminal	for DP410/DP610	ODP54 281613
㉓	*Vacuum pump switch (AC100V)	for DP410/DP610	ODP84 281625
㉔	*Vacuum pump switch (AC200V)	for DP410/DP610	ODP56 281614
㉕	*Pirani vacuum gauge with 0-10mV voltage output (analog type)	for DP410/DP610	ODP58 281615
㉖	*Pirani vacuum gauge with 0-10mV voltage output (digital type)	for DP410/DP610	ODP62 281616
㉗	*Recorder	for DP410/DP610	ODP64 281617
㉘	*Digital vacuum indicator	for DP410/DP610	ODP82 281618
㉙	*N <sub>2</sub> gas supply unit (with flow Indicator)	for DP410	ODP66 281619
㉚	*Slide type vacuum pump Stand A	for DP410	ODP72 281620
㉛	*Slide type vacuum pump Stand B	for DP410	ODP76 281621
㉜	*N <sub>2</sub> Gas supply unit (with flow Indicator)	for DP610	ODP68 281622
㉝	*Slide type vacuum pump Stand C	for DP610	ODP74 281623
㉞	*Slide type vacuum pump Stand D	for DP610	ODP78 281624

\* Please specify when ordering main unit.  
ODP28 and ODP32(DP200/300) ODP58, ODP62 and ODP68(DP410/610) are selectable and can not be set at the same time.

## Dimensions (Unit:mm)

