# ODA
TECHNOLOGIES

## PRODUCTS CATALOG


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ODA TECHNOLOGIES CO., LTD.

# POWER ELECTRONIC MEASURING INSTRUMENTS





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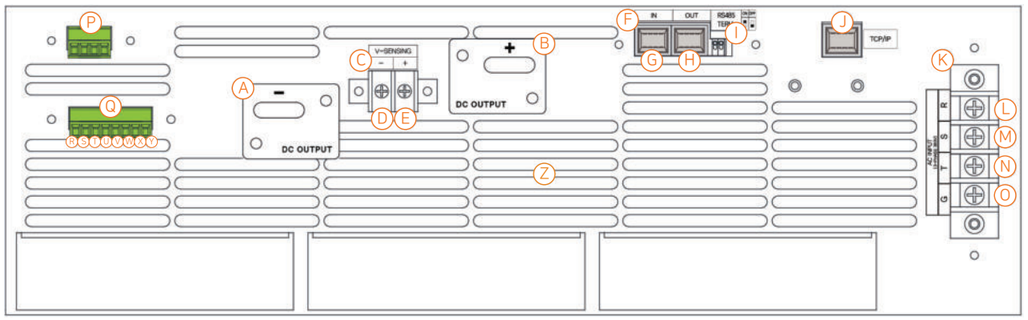
# MX Series

## Switching Type Programmable DC Power Supply

### High Power, High Precision up to 300kW(10kW, 15kW in 3U)

MX series is a switching type programmable DC Power supply that can output high power with small product size. This series can supply power and measurement without other measuring instruments by its excellent precision and various protection mode. MX series is optimized for high power with parallel connection and can output power clearly and continuously with low ripple/noise and fast transient time.


1. Ventilation slit
2. 16 Characters, LCD Display
3. Error Lamp
4. Limit Display Lamp
5. Key Lock Lamp
6. Remote Interface Lamp
7. CV Mode Lamp
8. CC Mode Lamp
9. Voltage setting Encoder
10. Current setting Encoder
11. Voltage Cursor or Menu Key
12. Current Cursor or Menu Key
13. Output ON/OFF Key
14. IO/Local setting or Error Display Key
15. Protection Setting or Front-panel Lock Key
16. Setting Value Display Key
17. Memory Save or Calibration Key
18. Memory Recall or Factory Key




- (A) - Negative Output
- (B) + Positive Output
- (C) Voltage Sensing Terminal Block
- (D) - Negative Sensing
- (E) + Negative Sensing
- (F) RS232C/RS485 Port
- (G) RS232C/RS485 Communication In Port
- (H) RS485 Communication Out Port
- (I) RS485 Termination Switch
- (J) TCP/IP Port (Option)
- (K) AC Input Terminal Block
- (L) AC 'R' Phase Input
- (M) AC 'S' Phase Input
- (N) AC 'T' Phase Input
- (O) AC Ground Input
- (P) Terminal Block for Parallel Connection Control
- (Q) Signal I/O Terminal Socket(Option)
- (R) Analog Input Voltage Terminal Block
- (S) Gnd
- (T) Analog Input Current Control Terminal Block
- (U) Analog Output Voltage Terminal Block
- (V) Analog Output Current Terminal Block
- (W) Gnd
- (X) Outside Output On/Off Terminal
- (Y) Outside Output On/Off Terminal
- (Z) Ventilation Slit

## Standard Features

- High Power Density up to 10kW, 15kW in 3U
- Wide Voltage Range : 0~20V up to 1500V from 10kW to 15kW, Parallelable up to 300kW
- 0.95 Power Factor
- Intensively Fast Load Transient Response Time: 0.5%/500us
- Low Ripple and Noise, High Accuracy, High Efficiency, High Stability
- 4-Digit Display Resolution
- 16×1 Big-Character Type LCD Display
- Adjustment Encoder for voltage and current setting
- CV/CC Mode
- Remote Voltage-Sensing(Voltage drop compensation)
- OVP, OCP Protection Mode
- UVL(Under Voltage Lock), OVL(Over Voltage Lock), UCL(Under Current Lock), OCL(Over Current Lock)
- Calibration Function(Manual and PC)
- Panel Lock Function
- Memory Save & Recall Function(Up to 10 operation states)
- 11 diverse Factory Modes(User memory clear, Last state, Calibration- Restore etc)
- AC Input 380/400Vac 3phase
- RS-232C, RS485 (TCP/IP is optional)
- SCPI compatible protocol is supported and Modbus is selectable for RS485

## Options

- RJ45 to RS232C cable
- RS232C Cable 1M, 2M, 4M
- RS485 Cable 2/4/8-Channel 1M, 2M, 4M, 10M
- AC Input Cable(Special order type)
- Output Cable(Special order type)

## Accessories

- AC Input Cable
- Output Bolts
- Rack mount Bracket
- Operating Manual (QR Code)
- Demo software (QR Code)

### Easy Control

MX Series can set voltage and current fast by intuitive control panel design and encoder switch for voltage and current each. Also, as it provides only few buttons for frequently used function, you can control the product easily.
Various setting can be available by its various functions.

### Intensively Fast Load Transient Response Time

MX Series can supply stable voltage to load by extremely fast recovery action from voltage drop or rise caused by excessive load change.

### 11 kinds of protection modes

MX Series supports 11 protection modes. OVP, OCP, OTP, AC Input Range, AC Phase, PFC, FAN, Module Balance, Control VCC, V-Sensing and Max Watt Trip protect product and load by detecting in real time.

## Line-Up and Specification

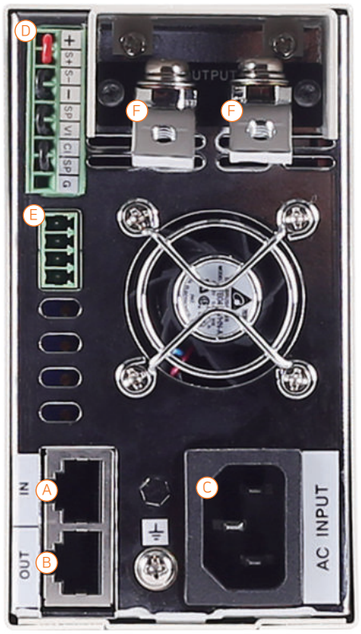
| 300kW (10kW, 15kW in 3U) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Voltage | 30V | 50V | 80V | 100V | 200V | 300V | 400V | 500V | 600V | 800V | 1000V | 1200V | 1500V |
| Current | 500A | 300A | 187.5A | 150A | 75A | 50A | 37.5A | 30A | 25A | 18.75A | 15A | 12.5A | 10A |

# PT Series

## Switching Type Programmable DC Power Supply

### 19inch Rack Standard & Benchtop type

PT Series is a switching type programmable DC power supply. Its compact size is designed for bench top as well as 19inch rack mounted. The product line-up consists of 200W, 400W and it is best solution of low power applications.
PT Series is convenient for system configuration by providing RS-232C and RS-485 communication at the same time.
ODA Technologies still provides Demo S/W program by free for easy use of communication


1. Operation state Lamp
2. Left/Right Cursor Key
3. Output ON/OFF Key
4. Limit Display Key
5. IO/Local & Error Display Key
6. Protection & Lock Key
7. Save & Calibration Key
8. Recall & Factory Key
9. Power ON/OFF Switch
10. LCD Display
11. Voltage Encoder Knob
12. Current Encoder Knob
13. DC Output Terminal For Measurement(Max 10A output)

- (A) RS-232C, RS-485 Interface Port
- (B) RS-485 Interface Port
- (C) AC Input
- (D) Analog Terminal(V-Sensing, Vout & Iout voltage programming by 0~10V or 0~5V)
- (E) Analog Option Terminal(Output ON/OFF control, Output Voltage & Current Monitoring by 0~5V or 0~10V)
- (F) Main Output Bus Bars

## Standard Features

- 4-Digit Display Resolution
- 8 Character, two line LCD Display
- Adjustable Encoder For Voltage and Current setting
- CV/CC Mode
- Remote V-Sensing(Voltage drop compensation)
- OVP, OCP Protection Mode
- UVL(Under Voltage Lock), OVL(Over Voltage Lock), UCL(Under Current Lock), OCL(Over Current Lock)
- Calibration Function(Manual and PC)
- Panel Lock Function
- Memory Save & Recall Function(Up to 10 operation states)
- Output ON/OFF Function
- 11 diverse Factory Modes(User memory clear, Last state, Calibration- Restore & etc)
- RS-232C, RS-485 standard(TCP/IP is optional)
- Analog Programing(Vout & Iout voltage programming by 0~10V or 0~5V)
- Front output is also available for measurement only, max 10A
- AC Input 110~240VAC ±10%

## Options

- RJ45 to RS232C cable
- RS-232C cable
- RS-485 cable
- Analog Monitoring(Output Voltage & Current Monitoring by 0~5V or 0~10V), Isolated type
- Output ON/OFF Signal Control
- TCP/IP Communication(External Type)
- Rack Mount Bracket
- Rack Mount Shelf
- AC Power Cord(Other Type)
- AC Input 170~270VAC±10%

## Accessories

- AC Power Cord(Type F)
- Operating Manual(QR Code)
- Demo Software Program(QR Code)

## Line-Up and Specification

Models in bold with* mark are CE certified.

| 200W, 400W | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model | **PT20-10*** | **PT20-20*** | **PT30-6.6*** | **PT30-13*** | **PT50-4*** | **PT50-8*** | PT80-2.5 | PT80-5 | PT100-2 | PT100-4 | PT200-1 | PT200-2 |
| Voltage | 20V | | 30V | | 50V | | 80V | | 100V | | 200V | |
| Current | 10A | 20A | 6.6A | 13A | 4A | 8A | 2.5A | 5A | 2A | 4A | 1A | 2A |
| Resolution | 10mV 10mA | | 10mV 10mA | | 10mV 1mA | | 10mV 1mA | | 100mV 1mA | | 100mV 1mA | |
| Ripple & Noise | ≤10mVrms | | ≤10mVrms | | ≤15mVrms | | ≤10mVrms | | ≤10mVrms | | ≤15mVrms | |
| Accuracy(V) | 40mV | | 60mV | | 100mV | | 160mV | | 200mV | | 400mV | |
| Accuracy(C) | 40mA | 60mA | 9.9mA | 19.8mA | 12mA | 24mA | 7.5mA | 15mA | 6mA | 12mA | 3mA | 6mA |
| AC Input | Single phase 110~240VAC ± 10% / 50~60Hz | | | | | | | | | | | |
| Dimension | 70mm(W) × 125.5mm(H) × 350mm(D) / 4.2kg | | | | | | | | | | | |

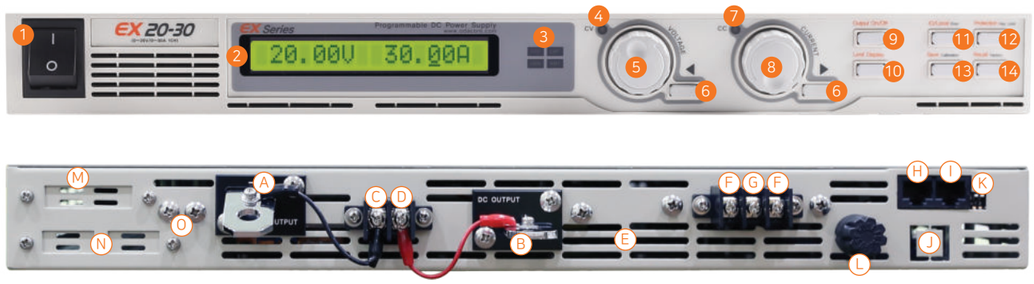
※ 600W, 800W and 1200W will be developed in near future

# EX Series

## Switching Type Programmable DC Power Supply

### 19inch Rack Standard & Benchtop type

EX Series is a switching type programmable DC Power supply. It is high-performance and high-efficiency with RS232C, RS485, USB, TCP/IP(option) interface based on SCPI (Standard Commands for Programmable Instruments) protocol. The combination of bench-top and system features in these power supplies provides various solutions for your design and test requirements in the industrial fields, R&D institute center and education fields.




1 Main Power
2 LCD Display
3 Status Indicate Lamp
4 CV Lamp
5 Voltage Control Encoder
6 Left/Right Cursor Key
7 CC Lamp
8 Current Control Encoder
9 Output On/Off Key
10 Limit Display Key
11 IO/Local Key
12 Protection & Key Lock Key
13 Store & Calibration Key
14 Recall & Factory Key
A - Output bus bars
B + Output bus bars
C - Voltage Sensing Input connector
D + Voltage Sensing Input connector
E Ventilation Slit
F AC Power Input Connector
G Earth Ground
H RS-232C Interface Port
I RS-485 Interface Port
J TCP/IP Port(option)
K RS485 TERMINAL
L AC Input Fuse
M Ex Series Option Port
N Analog Input & Output Calibration Port
O Earth Ground Connection Screw

### SLIM TYPE

EX Series is space-efficient product which support up to 2.5kW with size of 19inch X 1U. User can experience innovative size and light weight compared to linear DC power supplies.

### PROTECTION

OVP, OCP mode protects DUT by cutting output off in case over voltage or over current flow during use. It can be safely used even when the user is careless or for long time testing. Also, It provides limit function such as OVL, UVL, UCL and etc to prevent user's setting mistake.

### DUAL CONTROL ENCODER

Dual Encoder for voltage and current respectively allow user to make the desired settings faster than single control encoder.
It is designed to be easy to use even for the first time users, so it can be used widely.

### MEMORY STORE & RECALL

User can save or recall setting voltage, current and operating states. Even if you are not a professional engineer, you can recall the memory that you have saved. user can easily use it for production, product inspection and reliability test etc.

## Standard Features

- 4-Digit Display Resolution
- 16×1 Big-Character Type LCD Display
- Adjustment Encoder for voltage and current setting
- CV/CC Mode
- Remote Voltage-Sensing(Voltage drop compensation)
- OVP, OCP Protection Mode
- UVL(Under Voltage Lock), OVL(Over Voltage Lock), UCL(Under Current Lock), OCL(Over Current Lock)
- Calibration Function(Manual and PC)
- Panel Lock Function
- Memory Save & Recall Function(Up to 10 operation states)
- Output ON/ OFF Function
- 11 diverse Factory Modes(User memory clear, Last state, Calibration- Restore etc)
- RS-232C, RS485, Communication(TCP/IP is optional)
- Single phase, AC Input 220VAC ±10% and 3 phase AC Input

## Options

- RJ45 to RS232C cable
- RS-232C cable
- RS-485 cable
- TCP/IP communication
- Output ON/OFF signal control
- Analog Programming(Vout & Iout voltage programming) & Monitoring (Output Voltage & Current Monitoring) by 0~5V or 0~10V, Isolated type
- AC Power Cord(Other type)
- AC Input 380V or 400V±10%, 3-phase 4-wire system(R,S,T,N,G), 50~60Hz
- AC Input 200V or 220V±10%, 3-phase 3-wire system(R,S,T,G), 50~60Hz

## Accessories

- AC Power Cord(Type F)
- Operating Manual(QR Code)
- Demo software program(QR Code)
- Rack mount Bracket

## Line-Up and Specification

| | 1U Size(600~2.5kW) | | | | 2U Size(3.75~5kW) | | | | 4U Size(6~10kW) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20V | 30A | 60A | 90A | - | 120A | 180A | 240A | - | 300A | 360A | 420A | 480A |
| 30V | 20A | 40A | 60A | 80A | 120A | 160A | - | - | 200A | 240A | 280A | 320A |
| 50V | 12A | 24A | 36A | 48A | 72A | 96A | - | - | 120A | 144A | 168A | 192A |
| 60V | 10A | 20A | 30A | 40A | 60A | 80A | - | - | 100A | 120A | 140A | 160A |
| 80V | 7.5A | 15A | 22.5A | 30A | 45A | 60A | - | - | 75A | 90A | 105A | 120A |
| 100V | 6A | 12A | 18A | 24A | 36A | 48A | - | - | 60A | 72A | 84A | 96A |
| 150V | 4A | 8A | 12A | 16A | 24A | 32A | - | - | 40A | 48A | 56A | 64A |
| 200V | 3A | 6A | 9A | 12A | 18A | 24A | - | - | 30A | 36A | 42A | 48A |
| 300V | 2A | 4A | 6A | 8A | 12A | 16A | - | - | 20A | 24A | 28A | 32A |
| 600V | 1A | 2A | - | - | 3A | 4A | 6A | 8A | 10A | 12A | 14A | 16A |

◎ Please contact us about un-listed capacity(or more than 10kW, EX Series supports to be customized up to 100kW)

# 1U Size (600W~2.5kW)

## Dimension: 19inch wide(426mm) Standard, 1U height(44mm)


## Line-Up and Specification

Models in bold with* mark are CE certified.

| SPEC / MODEL | Output Rating (@0℃~40℃) V | Output Rating (@0℃~40℃) A | Line & Load Regulation (%0.1+offset) | Programming Accuracy @25℃(@0.1+offset) V | Programming Accuracy @25℃(@0.1+offset) A | Readback Accuracy @25℃(@0.1+offset) V | Readback Accuracy @25℃(@0.1+offset) A | Ripple & Noise (@20Mhz) RMS Value | Display Resolution V | Display Resolution A | Weight | Efficiency (Typical) % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1U Size (426mm(W)*44mm(H)) : 600W ~ 2.5kW** | | | | | | | | | | | | |
| EX20-30 | 0~21 | 0~31.5 | ≤0.1% | 30mV | 95mA | 20mV | 63mA | 10mV | 0.01 | 0.01 | 6.25Kg | 80 |
| EX20-60 | 0~21 | 0~63 | ≤0.1% | 30mV | 189mA | 20mV | 126mA | 10mV | 0.01 | 0.01 | 7.5Kg | 80 |
| EX20-90 | 0~21 | 0~94.5 | ≤0.1% | 30mV | 284mA | 20mV | 189mA | 10mV | 0.01 | 0.01 | 8.75Kg | 80 |
| **EX30-20*** | 0~31.5 | 0~21 | ≤0.1% | 45mV | 63mA | 30mV | 42mA | 10mV | 0.01 | 0.01 | 6.25Kg | 82 |
| **EX30-40*** | 0~31.5 | 0~42 | ≤0.1% | 45mV | 126mA | 30mV | 84mA | 10mV | 0.01 | 0.01 | 7.5Kg | 82 |
| **EX30-60*** | 0~31.5 | 0~63 | ≤0.1% | 45mV | 189mA | 30mV | 126mA | 10mV | 0.01 | 0.01 | 8.75Kg | 82 |
| **EX30-80*** | 0~31.5 | 0~84 | ≤0.1% | 45mV | 252mA | 30mV | 168mA | 10mV | 0.01 | 0.01 | 10Kg | 82 |
| EX50-12 | 0~52.5 | 0~12.6 | ≤0.1% | 75mV | 38mA | 50mV | 25mA | 10mV | 0.01 | 0.01 | 6.25Kg | 85 |
| EX50-24 | 0~52.5 | 0~25.2 | ≤0.1% | 75mV | 76mA | 50mV | 50mA | 10mV | 0.01 | 0.01 | 7.5Kg | 83 |
| EX50-36 | 0~52.5 | 0~37.8 | ≤0.1% | 75mV | 113mA | 50mV | 76mA | 10mV | 0.01 | 0.01 | 8.75Kg | 83 |
| EX50-48 | 0~52.5 | 0~50.4 | ≤0.1% | 75mV | 151mA | 50mV | 101mA | 10mV | 0.01 | 0.01 | 10Kg | 83 |
| EX60-10 | 0~63 | 0~10.5 | ≤0.1% | 90mV | 32mA | 60mV | 21mA | 10mV | 0.01 | 0.01 | 6.25Kg | 85 |
| EX60-20 | 0~63 | 0~21 | ≤0.1% | 90mV | 63mA | 60mV | 42mA | 10mV | 0.01 | 0.01 | 7.5Kg | 85 |
| EX60-30 | 0~63 | 0~31.5 | ≤0.1% | 90mV | 95mA | 60mV | 63mA | 10mV | 0.01 | 0.01 | 8.75Kg | 85 |
| EX60-40 | 0~63 | 0~42 | ≤0.1% | 90mV | 126mA | 60mV | 84mA | 10mV | 0.01 | 0.01 | 10Kg | 85 |
| EX80-7.5 | 0~84 | 0~7.875 | ≤0.1% | 120mV | 24mA | 80mV | 16mA | 10mV | 0.01 | 0.001 | 6.25Kg | 85 |
| EX80-15 | 0~84 | 0~15.7 | ≤0.1% | 120mV | 47mA | 80mV | 32mA | 10mV | 0.01 | 0.01 | 7.5Kg | 85 |
| EX80-22.5 | 0~84 | 0~23.6 | ≤0.1% | 120mV | 71mA | 80mV | 47mA | 10mV | 0.01 | 0.01 | 8.75Kg | 85 |
| EX80-30 | 0~84 | 0~31.5 | ≤0.1% | 120mV | 95mA | 80mV | 63mA | 10mV | 0.01 | 0.01 | 10Kg | 85 |
| EX100-6 | 0~105 | 0~6.3 | ≤0.1% | 150mV | 19mA | 100mV | 13mA | 10mV | 0.1 | 0.001 | 6.25Kg | 85 |
| EX100-12 | 0~105 | 0~12.6 | ≤0.1% | 150mV | 38mA | 100mV | 25mA | 10mV | 0.1 | 0.01 | 7.5Kg | 85 |
| EX100-18 | 0~105 | 0~18.9 | ≤0.1% | 150mV | 57mA | 100mV | 38mA | 10mV | 0.1 | 0.01 | 8.75Kg | 85 |
| EX100-24 | 0~105 | 0~25.2 | ≤0.1% | 150mV | 76mA | 100mV | 50mA | 10mV | 0.1 | 0.01 | 10Kg | 85 |
| EX150-4 | 0~157.5 | 0~4.2 | ≤0.1% | 225mV | 13mA | 150mV | 8mA | 15mV | 0.1 | 0.001 | 6.25Kg | 85 |
| EX150-8 | 0~157.5 | 0~8.4 | ≤0.1% | 225mV | 25mA | 150mV | 17mA | 15mV | 0.1 | 0.001 | 7.5Kg | 85 |
| EX150-12 | 0~157.5 | 0~12.6 | ≤0.1% | 225mV | 38mA | 150mV | 25mA | 15mV | 0.1 | 0.01 | 8.75Kg | 85 |
| EX150-16 | 0~157.5 | 0~16.8 | ≤0.1% | 225mV | 50mA | 150mV | 34mA | 15mV | 0.1 | 0.01 | 10Kg | 85 |
| EX200-3 | 0~210 | 0~3.15 | ≤0.1% | 300mV | 9mA | 200mV | 6mA | 15mV | 0.1 | 0.001 | 6.25Kg | 85 |
| EX200-6 | 0~210 | 0~6.3 | ≤0.1% | 300mV | 19mA | 200mV | 13mA | 15mV | 0.1 | 0.001 | 7.5Kg | 85 |
| EX200-9 | 0~210 | 0~9.45 | ≤0.1% | 300mV | 28mA | 200mV | 19mA | 15mV | 0.1 | 0.001 | 8.75Kg | 85 |
| EX200-12 | 0~210 | 0~12.6 | ≤0.1% | 300mV | 38mA | 200mV | 25mA | 15mV | 0.1 | 0.01 | 10Kg | 85 |
| **EX300-2*** | 0~315 | 0~2.1 | ≤0.1% | 450mV | 6mA | 300mV | 4mA | 25mV | 0.1 | 0.001 | 6.25Kg | 85 |
| **EX300-4*** | 0~315 | 0~4.2 | ≤0.1% | 450mV | 13mA | 300mV | 8mA | 25mV | 0.1 | 0.001 | 7.5Kg | 85 |
| **EX300-6*** | 0~315 | 0~6.3 | ≤0.1% | 450mV | 19mA | 300mV | 13mA | 25mV | 0.1 | 0.001 | 8.75Kg | 85 |
| **EX300-8*** | 0~315 | 0~8.4 | ≤0.1% | 450mV | 25mA | 300mV | 17mA | 25mV | 0.1 | 0.001 | 10Kg | 85 |
| EX600-1 | 0~630 | 0~1.05 | ≤0.1% | 900mV | 3mA | 600mV | 2mA | 60mV | 0.1 | 0.001 | 8.75Kg | 85 |
| EX600-2 | 0~630 | 0~2.1 | ≤0.1% | 900mV | 6mA | 600mV | 4mA | 60mV | 0.1 | 0.001 | 8.75Kg | 85 |

※ Please contact us about un-listed capacity(or more than 10kW, EX Series supports to be customized up to 100kW)



# 2U Size (3.75kW~5kW)

## Dimension: 19inch wide(426mm) Standard, 2U height(88mm)


## Line-Up and Specification

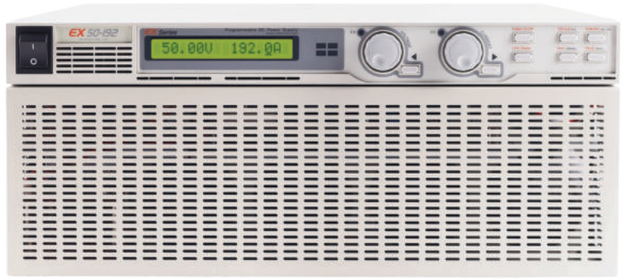
Models in bold with* mark are CE certified.

| SPEC / MODEL | Output Rating (@0℃~40℃) V | Output Rating (@0℃~40℃) A | Line & Load Regulation (%0.1+offset) | Programming Accuracy @25℃(@0.1+offset) V | Programming Accuracy @25℃(@0.1+offset) A | Readback Accuracy @25℃(@0.1+offset) V | Readback Accuracy @25℃(@0.1+offset) A | Ripple & Noise (@20Mhz) RMS Value | Display Resolution V | Display Resolution A | Weight | Efficiency (Typical) % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2U Size (426mm(W)*88mm(H)) 3.75kW ~ 5kW** | | | | | | | | | | | | |
| EX20-120 | 0~21 | 0~126 | ≤0.1% | 30mV | 378mA | 20mV | 252mA | 15mV | 0.01 | 0.1 | 13Kg | 80 |
| EX20-180 | 0~21 | 0~189 | ≤0.1% | 30mV | 567mA | 20mV | 378mA | 15mV | 0.01 | 0.1 | 15.5Kg | 80 |
| EX20-240 | 0~21 | 0~252 | ≤0.1% | 30mV | 756mA | 20mV | 504mA | 15mV | 0.01 | 0.1 | 18Kg | 80 |
| **EX30-120*** | 0~31.5 | 0~126 | ≤0.1% | 45mV | 378mA | 30mV | 252mA | 15mV | 0.01 | 0.1 | 15.5Kg | 82 |
| **EX30-160*** | 0~31.5 | 0~168 | ≤0.1% | 45mV | 504mA | 30mV | 336mA | 15mV | 0.01 | 0.1 | 18Kg | 82 |
| EX50-72 | 0~52.5 | 0~75.6 | ≤0.1% | 75mV | 227mV | 50mV | 151mA | 15mV | 0.01 | 0.01 | 15.5Kg | 85 |
| EX50-96 | 0~52.5 | 0~100.8 | ≤0.1% | 75mV | 302mA | 50mV | 202mA | 15mV | 0.01 | 0.01 | 18Kg | 85 |
| EX60-60 | 0~63 | 0~63 | ≤0.1% | 90mV | 189mA | 60mV | 126mA | 15mV | 0.01 | 0.01 | 15.5Kg | 85 |
| EX60-80 | 0~63 | 0~84 | ≤0.1% | 90mV | 252mA | 60mV | 168mA | 15mV | 0.01 | 0.01 | 18Kg | 85 |
| EX80-45 | 0~84 | 0~47.25 | ≤0.1% | 120mV | 142mA | 80mV | 95mA | 15mV | 0.01 | 0.01 | 15.5Kg | 85 |
| EX80-60 | 0~84 | 0~63 | ≤0.1% | 120mV | 189mA | 80mV | 126mA | 15mV | 0.01 | 0.01 | 18Kg | 85 |
| EX100-36 | 0~105 | 0~36 | ≤0.1% | 150mV | 113mA | 100mV | 76mA | 15mV | 0.1 | 0.01 | 15.5Kg | 85 |
| EX100-48 | 0~105 | 0~50.4 | ≤0.1% | 150mV | 151mA | 100mV | 101mA | 15mV | 0.1 | 0.01 | 18Kg | 85 |
| EX150-24 | 0~157.5 | 0~25.2 | ≤0.1% | 225mV | 76mA | 150mV | 50mA | 15mV | 0.1 | 0.01 | 15.5Kg | 85 |
| EX150-32 | 0~157.5 | 0~33.6 | ≤0.1% | 225mV | 101mA | 150mV | 67mA | 15mV | 0.1 | 0.01 | 18Kg | 85 |
| EX200-18 | 0~210 | 0~18.9 | ≤0.1% | 300mV | 57mA | 200mV | 38mA | 30mV | 0.1 | 0.01 | 15Kg | 85 |
| EX200-24 | 0~210 | 0~25.2 | ≤0.1% | 300mV | 76mA | 200mV | 50mA | 30mV | 0.1 | 0.01 | 18Kg | 85 |
| EX300-12 | 0~315 | 0~12.6 | ≤0.1% | 450mV | 38mA | 300mV | 25mA | 50mV | 0.1 | 0.01 | 15Kg | 85 |
| EX300-16 | 0~315 | 0~16.8 | ≤0.1% | 450mV | 50mA | 300mV | 34mA | 50mV | 0.1 | 0.01 | 18Kg | 85 |
| EX600-3 | 0~630 | 0~3.15 | ≤0.1% | 900mV | 9mA | 600mV | 6mA | 120mV | 0.1 | 0.001 | 15Kg | 85 |
| EX600-4 | 0~630 | 0~4.2 | ≤0.1% | 900mV | 13mA | 600mV | 8mA | 120mV | 0.1 | 0.001 | 15Kg | 85 |
| EX600-6 | 0~630 | 0~6.3 | ≤0.1% | 900mV | 19mA | 600mV | 13mA | 120mV | 0.1 | 0.001 | 18Kg | 85 |
| EX600-8 | 0~630 | 0~8.4 | ≤0.1% | 900mV | 25mA | 600mV | 17mA | 120mV | 0.1 | 0.001 | 18Kg | 85 |

※ Please contact us about un-listed capacity(or more than 10kW, EX Series supports to be customized up to 100kW)

# 4U Size (6kW~10kW)

Dimension: 19inch wide(426mm) Standard, 4U height(176mm)



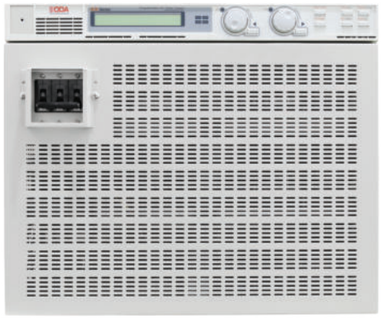
## Line-Up and Specification

| SPEC / MODEL | Output Rating (@0℃~40℃) | | Line & Load Regulation (%0.1+offset) | Programming Accuracy @25℃(@0.1+offset) | | Readback Accuracy @25℃(@0.1+offset) | | Ripple & Noise (@20Mhz) RMS Value | Display Resolution | | Weight | Efficiency (Typical) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | A | | V | A | V | A | | V | A | | % |
| **4U Size (426mm(W)*176mm(H) ) : 6kW ~ 10kW** | | | | | | | | | | | | |
| EX20-300 | 0~21 | 0~315 | ≤0.1% | 30mV | 945mA | 20mV | 630mA | 30mV | 0.01 | 0.1 | 26.5Kg | 80 |
| EX20-360 | 0~21 | 0~378 | ≤0.1% | 30mV | 1134mA | 20mV | 756mA | 30mV | 0.01 | 0.1 | 29Kg | 80 |
| EX20-420 | 0~21 | 0~441 | ≤0.1% | 30mV | 1323mA | 20mV | 882mA | 30mV | 0.01 | 0.1 | 31.5Kg | 80 |
| EX20-480 | 0~21 | 0~504 | ≤0.1% | 30mV | 1512mA | 20mV | 1008mA | 30mV | 0.01 | 0.1 | 34Kg | 80 |
| EX30-200 | 0~31.5 | 0~210 | ≤0.1% | 45mV | 630mA | 30mV | 420mA | 30mV | 0.01 | 0.1 | 26.5Kg | 83 |
| EX30-240 | 0~31.5 | 0~252 | ≤0.1% | 45mV | 756mA | 30mV | 504mA | 30mV | 0.01 | 0.1 | 29Kg | 83 |
| EX30-280 | 0~31.5 | 0~294 | ≤0.1% | 45mV | 882mA | 30mV | 588mA | 30mV | 0.01 | 0.1 | 31.5Kg | 83 |
| EX30-320 | 0~31.5 | 0~336 | ≤0.1% | 45mV | 1008mA | 30mV | 672mA | 30mV | 0.01 | 0.1 | 34Kg | 83 |
| EX50-120 | 0~52.5 | 0~126 | ≤0.1% | 75mV | 378mA | 50mV | 252mA | 30mV | 0.01 | 0.1 | 26.5Kg | 85 |
| EX50-144 | 0~52.5 | 0~151.2 | ≤0.1% | 75mV | 454mA | 50mV | 302mA | 30mV | 0.01 | 0.1 | 29Kg | 85 |
| EX50-168 | 0~52.5 | 0~176.4 | ≤0.1% | 75mV | 529mA | 50mV | 353mA | 30mV | 0.01 | 0.1 | 31.5Kg | 85 |
| EX50-192 | 0~52.5 | 0~201.6 | ≤0.1% | 75mV | 605mA | 50mV | 403mA | 30mV | 0.01 | 0.1 | 34Kg | 85 |
| EX60-100 | 0~63 | 0~105 | ≤0.1% | 90mV | 315mA | 60mV | 210mA | 30mV | 0.01 | 0.1 | 26.5Kg | 85 |
| EX60-120 | 0~63 | 0~126 | ≤0.1% | 90mV | 378mA | 60mV | 252mA | 30mV | 0.01 | 0.1 | 29Kg | 85 |
| EX60-140 | 0~63 | 0~147 | ≤0.1% | 90mV | 441mA | 60mV | 294mA | 30mV | 0.01 | 0.1 | 31.5Kg | 85 |
| EX60-160 | 0~63 | 0~168 | ≤0.1% | 90mV | 504mA | 60mV | 336mA | 30mV | 0.01 | 0.1 | 34Kg | 85 |
| EX80-75 | 0~84 | 0~78.75 | ≤0.1% | 120mV | 236mA | 80mV | 158mA | 30mV | 0.01 | 0.01 | 26.5Kg | 85 |
| EX80-90 | 0~84 | 0~94.5 | ≤0.1% | 120mV | 284mA | 80mV | 189mA | 30mV | 0.01 | 0.01 | 29Kg | 85 |
| EX80-105 | 0~84 | 0~110.25 | ≤0.1% | 120mV | 331mA | 80mV | 221mA | 30mV | 0.01 | 0.1 | 31.5Kg | 85 |
| EX80-120 | 0~84 | 0~126 | ≤0.1% | 120mV | 378mA | 80mV | 252mA | 30mV | 0.01 | 0.1 | 34Kg | 85 |
| EX100-60 | 0~105 | 0~63 | ≤0.1% | 150mV | 189mA | 100mV | 126mA | 40mV | 0.1 | 0.01 | 26.5Kg | 85 |
| EX100-72 | 0~105 | 0~75.6 | ≤0.1% | 150mV | 227mA | 100mV | 151mA | 40mV | 0.1 | 0.01 | 29Kg | 85 |
| EX100-84 | 0~105 | 0~88.2 | ≤0.1% | 150mV | 265mA | 100mV | 176mA | 40mV | 0.1 | 0.01 | 31.5Kg | 85 |
| EX100-96 | 0~105 | 0~100.8 | ≤0.1% | 150mV | 302mA | 100mV | 202mA | 40mV | 0.1 | 0.01 | 34Kg | 85 |
| EX150-40 | 0~157.5 | 0~42 | ≤0.1% | 225mV | 126mA | 150mV | 84mA | 50mV | 0.1 | 0.01 | 26.5Kg | 85 |
| EX150-48 | 0~157.5 | 0~50.4 | ≤0.1% | 225mV | 151mA | 150mV | 101mA | 50mV | 0.1 | 0.01 | 29Kg | 85 |
| EX150-56 | 0~157.5 | 0~58.8 | ≤0.1% | 225mV | 176mA | 150mV | 118mA | 50mV | 0.1 | 0.01 | 31.5Kg | 85 |
| EX150-64 | 0~157.5 | 0~67.2 | ≤0.1% | 225mV | 202mA | 150mV | 134mA | 50mV | 0.1 | 0.01 | 34Kg | 85 |
| EX200-30 | 0~210 | 0~31.5 | ≤0.1% | 300mV | 95mA | 200mV | 63mA | 60mV | 0.1 | 0.01 | 26.5Kg | 85 |
| EX200-36 | 0~210 | 0~37.8 | ≤0.1% | 300mV | 113mA | 200mV | 76mA | 60mV | 0.1 | 0.01 | 29Kg | 85 |
| EX200-42 | 0~210 | 0~44.1 | ≤0.1% | 300mV | 132mA | 200mV | 88mA | 60mV | 0.1 | 0.01 | 31.5Kg | 85 |
| EX200-48 | 0~210 | 0~50.4 | ≤0.1% | 300mV | 151mA | 200mV | 101mA | 60mV | 0.1 | 0.01 | 34Kg | 85 |
| EX300-20 | 0~315 | 0~21 | ≤0.1% | 450mV | 63mA | 300mV | 42mA | 100mV | 0.1 | 0.01 | 26.5Kg | 85 |
| EX300-24 | 0~315 | 0~25.2 | ≤0.1% | 450mV | 76mA | 300mV | 50mA | 100mV | 0.1 | 0.01 | 29Kg | 85 |
| EX300-28 | 0~315 | 0~29.4 | ≤0.1% | 450mV | 88mA | 300mV | 59mA | 100mV | 0.1 | 0.01 | 31.5Kg | 85 |
| EX300-32 | 0~315 | 0~33.6 | ≤0.1% | 450mV | 101mA | 300mV | 67mA | 100mV | 0.1 | 0.01 | 34Kg | 85 |
| EX600-10 | 0~630 | 0~10.5 | ≤0.1% | 900mV | 32mA | 600mV | 21mA | 240mV | 0.1 | 0.01 | 31Kg | 85 |
| EX600-12 | 0~630 | 0~12.6 | ≤0.1% | 900mV | 38mA | 600mV | 25mA | 240mV | 0.1 | 0.01 | 31Kg | 85 |
| EX600-14 | 0~630 | 0~14.7 | ≤0.1% | 900mV | 44mA | 600mV | 29mA | 240mV | 0.1 | 0.01 | 31.5Kg | 85 |
| EX600-16 | 0~630 | 0~16.8 | ≤0.1% | 900mV | 50mA | 600mV | 34mA | 240mV | 0.1 | 0.01 | 31.5Kg | 85 |

◎ Please contact us about un-listed capacity(or more than 10kW, EX Series supports to be customized up to 100kW)

# EX Series - High Capacity

In case of 10kW~100kW, EX Series still support it by custom order



| 8U Size | |
|---|---|
| Dimension | 426mm(W) x 352mm(H) x 550mm(D) |

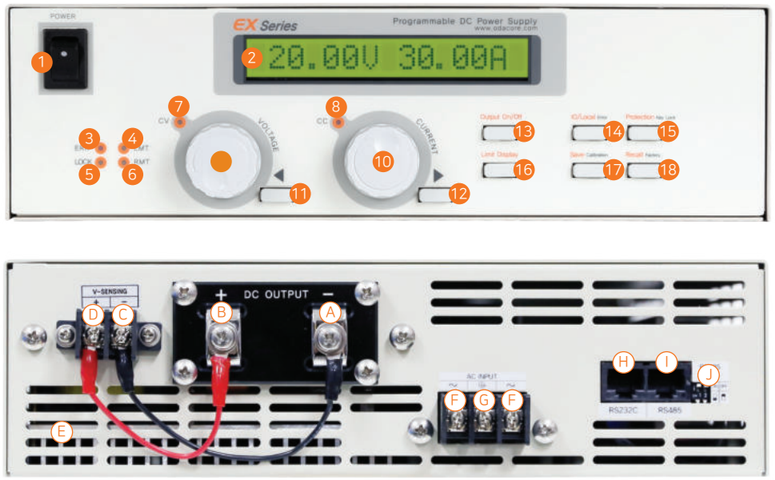
| Rack Mount | |
|---|---|
| Dimension | 600mm(W) x 800mm~2000mm(H) x 900mm(D) |

# EX-TB Series

## Switching Type Programmable DC Power Supply

### High Performance, High Efficiency Compact size

EX-TB Series is high-performance and high-efficiency programmable single output DC power supply with bench-top size. This series supports RS232C, RS485(RJ-45 type) interface based on SCPI (Standard Commands for Programmable Instruments) protocol. This power supply will provide various solutions for your design and test requirements in the industrial fields, R&D institute center and education fields.




1. Power switch
2. 16Character, one line LCD Display
3. Error Lamp
4. Limit Display Lamp
5. Key Lock Lamp
6. Remote Interface Lamp
7. CV Mode Lamp
8. CC Mode Lamp
9. Voltage Encoder Knob
10. Current Encoder Knob
11. Volt Cursor or Menu Change Key
12. Curr Cursor or Menu Change Key
13. Output ON/OFF Key
14. IO/Local Setting and Error Display Key
15. Protection Setting and Front-panel Lock Key
16. Volt/Curr Setting Limit Display Key
17. Store or Calibration Key
18. Recall or Factory Key

- A. – Output busbar
- B. + Output busbar
- C. – Voltage Sensing Input terminal
- D. + Voltage Sensing Input terminal
- E. Ventilation Slit
- F. AC Input
- G. Earth Ground
- H. RS232C Interface port
- I. RS485 Interface port
- J. RS485 TERMINAL

### COMPACT SIZE

EX-TB Series was developed from EX Series that has smaller size compared to EX Series. Though it has bench top size but has same specifications with EX Series.

### PROTECTION MODE

Built-in OVP(Over Voltage Protection) and OCP(Over Current Protection) protection modes block the output when the output voltage and current are over the limit that user set to protect the load. This mode will be worked when user's negligence happened or conduct test for a long time.

### DUAL CONTROL ENCODER

The control encoders for voltage and current help to set the mode you try to change fast compared to single control encoder. It was designed to use the product easily even though user is not familiar programmable power supply.

### MEMORY STORE & RECALL

Even you are not an engineer, user can easily save and recall the voltage, current and state of use to inspect production. Also you can use this model for the reliability test and other tests too by using the function that recalls the memory which was saved in advance.

## Standard Features

- Bench top size for up to 2.4kW power with 265mm(W) x 75mm(H)/150mm(H) x 404mm(D)
- 4-Digit Display Resolution
- 16×1 Big-Char Type LCD Display attached
- Adjustment encoder provided for voltage and current
- OVP(Over Voltage Protection), OCP(Over Current Protection) Protection Mode provided
- UVL(Under Voltage Lock), OVL(Over Voltage Lock), UCL(Under Current Lock), OCL(Over Current Lock)
- Calibration function provided(manual and PC)
- Panel Lock function provided
- Memory Store & Recall function provided(It is possible to store and recall 10)
- Output ON/ OFF function(Signal control is optional)
- Limit Display function provided
- 11 diverse Factory Modes provided
- RS-232C, RS485 Communication mode is basic(TCP/IP communication is optional)
- Single phase, AC Input 220VAC ±10% and 3 phase AC Input(option)

## Options

- RJ45 to RS232C cable
- RS-232C cable
- RS- 485 cable
- TCP/IP communication
- Output ON/OFF signal control
- Analog Programming(Vout & Iout voltage programming) & Monitoring (Output Voltage & Current Monitoring) by 0~5V or 0~10V, Isolated type
- AC Power Cord(Other type)
- AC Input 380V or 400V± 10%, 3-phase 4-wire system(R,S,T,N,G), 50~60Hz
- AC Input 200V or 220V± 10%, 3-phase 3-wire system(R,S,T,G), 50~60Hz

## Accessories

- AC Power Cord(Type F)
- Operating Manual(QR code)
- Demo software program(QR code)

## Line-Up and Specification

Models in bold with* mark are CE certified.

| 600W ~ 2.4kW | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Voltage** | 20V | 30V | 50V | 60V | 80V | 100V | 150V | 200V | 300V |
| **Current** | 30A | 20A | 20A | 10A | 7.5A | 6A | 4A | 3A | 2A |
| | 60A | **40A*** | 40A | 20A | 15A | 12A | 8A | 6A | 4A |
| | 90A | 60A | 60A | 30A | 22.5A | 18A | 12A | 9A | 6A |
| | 120A | 80A | 80A | 40A | 30A | 24A | 16A | 12A | 8A |

# Linear Type Products

## Product Line-up

### OPE Series

Economical Type Programmable DC Power Supply, 3-Digit

- OPE-S Series(1CH)
- OPE-DI Series(2CH)
- OPE-Q Series(Variable 2CH, Fixed 2CH, COM Type)
- OPE-QI Series(Variable 2CH, Fixed 2CH)

### OPS Series

High precision Programmable DC Power Supply, 5-Digit
Single Channel

### OPM Series

High precision Programmable DC Power Supply, 5-Digit
Dual Channel(Basic), Custom order up to 255channels

# Linear Type Programmable DC Power Supply

## Product Dimension

**~ 300W**

OPE-S Series

OPE-DI Series

OPE-Q Series

OPE-QI Series

OPS Series

OPM Series

| | |
|---|---|
| OPE Series | 213mm(W) x 88mm(H) x 362mm(D) |
| OPS/OPM Series | 213mm(W) x 132mm(H) x 370mm(D) |

**300W~600W**

OPE Series

OPS, OPM Series

**600W~3kW**

OPE Series

OPS, OPM Series

**3kW~**

| | |
|---|---|
| 300W~600W | 300mm(W) x 150mm(H) x 465mm(D) |
| 600W~1.2kW | 426mm(W) x 177mm(H) x 505mm(D) |
| 1.2kW~2.5kW | 426mm(W) x 265mm(H) x 650mm(D) |
| 2.5kW~3kW | 426mm(W) x 356mm(H) x 650mm(D) |
| 3kW ~ | Rack Mount<br>600mm(W) x 800~2000mm(H) x 900mm(D) |

# OPE-Q Series / OPE-QI Series

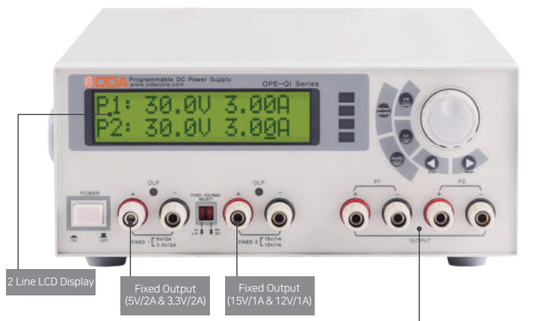
## Linear Type Programmable DC Power Supply

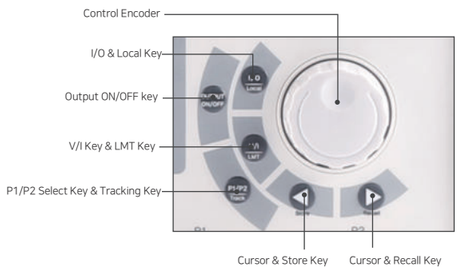
### Cost-Effective Power Supply with 4 channels

OPE-Q and OPE-QI Series is economical programmable DC power supply with RS-232C(RS-485 option) interface based on SCPI (Standard Commands for Programmable Instruments) protocol and the combination of bench-top and system features in these power supplies provides versatile solutions for your design and test requirements in the industrial fields, R&D institute center and education fields.

**OPE-Q Series** (COM Type)


**OPE-QI Series** (Isolated Type)





## TRACKING MODE

**User can control two channels at the same time by Tracking Mode function.**

It enables two channels to be linked together by pressing one button and enable users set output voltage or current at the same time.

## STORE / RECALL

**Easily operate power supply and save time**

Users can save up to five(5) setting values and easily recall it by using front button.

## Standard Features

- 3-Digit Display Resolution
- 16×2 Big-Character Type LCD Display
- CV/CC Mode
- Output ON/OFF Function
- Tracking Mode Function(Control 2 output at the same time)
- 2 variable output & 2 fixed output
- Memory Save and Recall(Up to 5 operation states)
- Half of 19inch(213mm) wide x 2U size(Less than 300W)
- RS-232C communication interface(RS-485 is optional)

## Options

- RS-232C cable
- RS-485 cable
- OVP, OCP(Remote Communication control only)
- Output ON/OFF signal control
- Analog Programming(Vout & Iout voltage programming) & Monitoring (Output Voltage & Current Monitoring) by 0~5V or 0~10V, Isolated type
- AC Power Cord(Other type)
- AC Input 110V ± 10%, 230V± 10%, 50~60Hz
- Rack Mount Support(Bracket and Shelf)

## Accessories

- AC Power Cord(Type F)
- Operating Manual(QR Code)
- Demo software program(QR Code)
- Banana to Alligator DC Output Cables(+,-)

## Line-Up and Specification

Models in bold with* mark are CE certified.

| OPE-Q Series | | | | | |
|---|---|---|---|---|---|
| MODEL | VOLTAGE | CURRENT | MODEL | VOLTAGE | CURRENT |
| **OPE-185Q*** | ±18V | 5A | OPE-801Q | ±80V | 1A |
| OPE-303Q | ±30V | 3A | OPE-1001Q | ±100V | 1A |
| OPE-305Q | ±30V | 5A | OPE-1201Q | ±120V | 1A |
| OPE-503Q | ±50V | 3A | | | |

◎ Fixed Output 2Channel Supported : 5V/2A, 15V/1A

| OPE-QI Series | | | | | |
|---|---|---|---|---|---|
| MODEL | VOLTAGE | CURRENT | MODEL | VOLTAGE | CURRENT |
| OPE-185QI | 18V | 5A | OPE-801QI | 80V | 1A |
| OPE-303QI | 30V | 3A | OPE-1001QI | 100V | 1A |
| OPE-305QI | 30V | 5A | OPE-1201QI | 120V | 1A |
| OPE-503QI | 50V | 3A | | | |

◎ Fixed Output 2Channel Supported : 5V(or 3.3V)/2A, 15V(or 12V) / 1A
(Each of fixed channel has two output voltage selection by switch)

| | OPE-801Q | OPE-1001Q | OPE-1201Q | OPE-801QI | OPE-1001QI | OPE-1201QI |
|---|---|---|---|---|---|---|
| **Output rating** | 0~±80V, 0~2A, 2CH Fixed output 2CH | 0~±100V, 0~1A, 2CH Fixed output 2CH | 0~±120V, 0~1A, 2CH Fixed output 2CH | 0~±80V, 0~2A, 2CH Fixed output 2CH | 0~±100V, 0~1A, 2CH Fixed output 2CH | 0~±120V, 0~1A, 2CH Fixed output 2CH |
| **Resolution** | | | | | | |
| Programming / Readback | ≤ 30mV / ≤ 0.8mA | ≤ 40mV / ≤ 0.5mA | ≤ 50mV / ≤ 0.5mA | ≤ 30mV / ≤ 0.8mA | ≤ 40mV / ≤ 0.5mA | ≤ 50mV / ≤ 0.5mA |
| Display Meter | 100mV / 10mA | 1V / 10mA | 1V / 10mA | 100mV / 10mA | 1V / 10mA | 1V / 10mA |
| **Programming Accuracy(@25℃±5℃) ±(%of output + offset)** | | | | | | |
| Voltage | 0.3% + 500mV | 0.5% + 800mV | 0.5% + 900mV | 0.3% + 500mV | 0.5% + 800mV | 0.5% + 900mV |
| Current | 0.2% + 15mA | 0.2% + 15mA | 0.2% + 15mA | 0.2% + 15mA | 0.2% + 15mA | 0.2% + 15mA |
| **Read-Back Accuracy(@25℃±5℃) ±(%of output + offset)** | | | | | | |
| Voltage | 0.3% + 500mV | 0.5% + 800mV | 0.5% + 900mV | 0.3% + 500mV | 0.5% + 800mV | 0.5% + 900mV |
| Current | 0.2% + 15mA | 0.2% + 15mA | 0.2% + 15mA | 0.2% + 15mA | 0.2% + 15mA | 0.2% + 15mA |
| **Ripple & Noise** | ≤ 6mVp-p, ≤ 2mArms | ≤ 0.01%mVrms, ≤ 2mArms | ≤ 0.01%mVrms, ≤ 2mArms | ≤ 6mVp-p, ≤ 2mArms | ≤ 0.01%mVrms, ≤ 2mArms | ≤ 0.01%mVrms, ≤ 2mArms |
| **Voltage Programming Speed(No load)** | | | | | | |
| Rising time | ≤ 70ms | ≤ 70ms | ≤ 70ms | ≤ 70ms | ≤ 70ms | ≤ 70ms |
| Falling time | ≤ 1.2s | ≤ 1.2s | ≤ 1.2s | ≤ 1.2s | ≤ 1.2s | ≤ 1.2s |
| Common detail | 2 Fixed output channels(5V/2A, 15V/1A ) Half of 19inch x 2U size : 213mm(W) x 88mm(H) x 362mm(D), RS-232C interface | | | 2 Fixed output channels( 5Vor 3.3V & 2A /15V or 12V & 1A ) Half of 19inch x 2U size : 213mm(W) x 88mm(H) x 362mm(D), RS-232C interface | | |

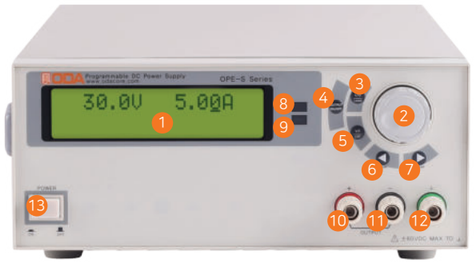
# OPE-S Series

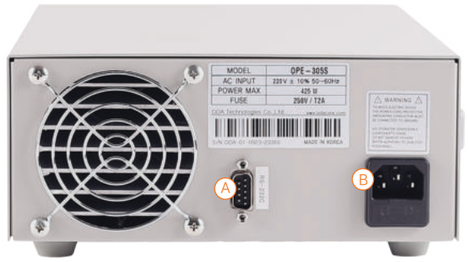
## Linear Type Programmable DC Power Supply

## Cost-Effective Power Supply with Single channel

OPE-S Series is economical programmable DC power supply with RS-232C(RS-485 option) interface based on SCPI(Standard Commands for Programmable Instruments) protocol and the combination of bench-top and system features in these power supplies provides versatile solutions for your design and test requirements  in the industrial fields, R&D institute center and education fields.

### ~ 300W




1. LCD Display
2. Encoder Knob for Volt/Curr Change
3. IO/Local & Remote Key
4. Output ON/OFF Key
5. Volt/Curr Selection or Limit Display Key
6. Cursor or Menu Change Key(or Store Key)
7. Cursor or Menu Change Key(or Recall Key)
8. CC Mode Indication Lamp
9. Remote Control Mode Indication Lamp
10. + Output Terminal
11. - Output Terminal
12. Earth Ground
13. Power ON/OFF Switch

- (A) RS-232C(RS-485 option) Interface
- (B) AC Input Inlet

### 300W~600W



- (A) RS-232C(RS-485 option) Interface
- (B) AC Input Inlet
- (C) DC Output Terminal

## Product Dimension Guide

| | |
|---|---|
| ~300W | 213mm(W) x 88mm(H) x 362mm(D), 2U |
| 300W~600W | 300mm(W) x 150mm(H) x 465mm(D) |
| 600W~1.2kW | 426mm(W) x 177mm(H) x 505mm(D), 4U |
| 1.2kW~2.5kW | 426mm(W) x 265mm(H) x 650mm(D), 6U |
| 2.5kW~3kW | 426mm(W) x 356mm(H) x 650mm(D), 8U |
| 3kW ~ | Rack Mount<br>600mm(W) x 800~2000mm(H) x 900mm(D) |

## Standard Features

- 3-Digit Display Resolution
- 16×2 Big-Character Type LCD Display
- CV/CC Mode
- Output ON/OFF Function
- Memory Save and Recall(Up to 5 operation states)
- RS-232C communication interface(RS-485 is optional)

## Options

- RS-232C cable
- RS-485 cable
- OVP, OCP(Remote Communication control only)
- Output ON/OFF signal control
- Analog Programming(Vout & Iout voltage programming) & Monitoring (Output Voltage & Current Monitoring) by 0~5V or 0~10V, Isolated type
- AC Power Cord(Other type)
- AC Input 110V ± 10%, 230V± 10%, 50~60Hz
- Rack Mount Support(Bracket and Shelf)

## Accessories

- AC Power Cord(Type F)
- Operating Manual(QR Code)
- Demo software program(QR Code)
- Banana to Alligator DC Output Cables(+,-)

## Line-Up and Specification

Models in bold with* mark are CE certified.

| | 1A | 2A | 3A | 5A | 10A | 20A | 30A | 50A | 80A | 100A | 150A | 200A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9V | - | - | - | - | OPE-910S | OPE-920S | OPE-930S | OPE-950S | - | OPE-9100S | - | OPE-9200S |
| 18V | - | - | - | OPE-185S | OPE-1810S | OPE-1820S | OPE-1830S | OPE-1850S | OPE-1880S | OPE-18100S | - | OPE-18200S |
| 30V | - | - | - | **OPE-305S*** | OPE-3010S | OPE-3020S | OPE-3030S | - | OPE-3080S | OPE-30100S | OPE-30150S | - |
| 50V | - | - | OPE-503S | OPE-505S | OPE-5010S | OPE-5020S | OPE-5030S | OPE-5050S | OPE-5080S | OPE-50100S | - | - |
| 80V | OPE-801S | OPE-802S | OPE-803S | OPE-805S | OPE-8010S | OPE-8020S | OPE-8030S | OPE-8050S | - | - | - | - |
| 100V | OPE-1001S | OPE-1002S | OPE-1003S | OPE-1005S | OPE-10010S | OPE-10020S | OPE-10030S | OPE-10050S | - | - | - | - |
| 150V | OPE-1501S | OPE-1502S | OPE-1503S | OPE-1505S | OPE-15010S | OPE-15020S | OPE-15030S | - | - | - | - | - |
| 200V | OPE-2001S | OPE-2002S | OPE-2003S | OPE-2005S | OPE-20010S | OPE-20020S | - | - | - | - | - | - |
| 250V | OPE-2501S | OPE-2502S | OPE-2503S | OPE-2505S | OPE-25010S | OPE-25020S | - | - | - | - | - | - |
| 300V | OPE-3001S | OPE-3002S | OPE-3003S | OPE-3005S | OPE-30010S | - | - | - | - | - | - | - |
| 500V | OPE-5001S | - | - | - | - | - | - | - | - | - | - | - |

※ Please contact us about un-listed capacity.

| | OPE-3010S | OPE-30100S |
|---|---|---|
| **Output rating** | 0~30V, 0~10A | 0~30V, 0~100A |
| **Resolution**<br>Programming / Readback<br>Display Meter | <br>≤ 7.5mV / ≤ 4mA<br>100mV / 100mA | <br>≤ 7.5mV / ≤ 25mA<br>100mV / 1A |
| **Programming Accuracy(@25℃±5℃)±(%of output + offset)**<br>Voltage<br>Current | <br>0.2% + 200mV<br>0.2% + 50mA | <br>0.2% + 200mV<br>0.2% + 500mA |
| **Read-Back Accuracy(@25℃±5℃)±(%of output + offset)**<br>Voltage<br>Current | <br>0.2% + 200mV<br>0.2% + 50mA | <br>0.2% + 200mV<br>0.2% + 500mA |
| **Ripple & Noise** | ≤ 2mVp-p, ≤ 3mArms | ≤ 10mVp-p, ≤ 10mArms |
| **Load Regulation** | 0.1% + 4mV, 0.01% + 1mA | 0.01% + 30mV, 0.01% + 10mA |
| **Line Regulation** | 0.1% + 4mV, 0.01% + 2mA | 0.01% + 30mV, 0.01% + 10mA |
| **Command Processing Time** | < 20ms | < 20ms |
| **Voltage Programming Speed(No load)**<br>Rising time<br>Falling time | <br>≤ 120ms<br>≤ 3.6s | <br>≤ 120ms<br>≤ 3.6s |
| **Dimension(W x H x D / mm)** | 213 x 88 x 362 | 426 x 265 x 650(8U) |
| **Transient Response Time** | Less than 50μs for output to recover to with in 15mV Following a change in output current full load to half load or vice versa | |
| Common detail | RS-232C | |

# OPE-DI Series

## Linear Type Programmable DC Power Supply

## Cost-Effective Power Supply with Dual channel

OPE-DI Series is economical programmable DC power supply with RS-232C(RS-485 option) interface based on SCPI(Standard Commands for Programmable Instruments) protocol and the combination of bench-top and system features in these power supplies provides versatile solutions for your design and test requirements  in the industrial fields, R&D institute center and education fields.

### ~ 300W


1. LCD Display
2. Encoder Knob for Volt/Curr Change
3. IO/Local & Remote Key
4. Output ON/OFF Key
5. Volt/Curr Selection or Limit Display Key
6. Output Channel Selection or Tracking Mode Key
7. Cursor or Menu Change Key(or Store Key)
8. Cursor or Menu Change Key(or Recall Key)
9. P1 CC Mode Indication Lamp
10. P2 CC Mode Indication Lamp
11. Tracking Mode Indication Lamp
12. Remote Control Mode Indication Mode
13. P1 + Output Terminal
14. P1 - Output Terminal
15. P2 + Output Terminal
16. P2 - Output Terminal
17. Power ON/OFF Switch

- (A) RS-232C(RS-485 option) Interface
- (B) AC Input Inlet

### 300W~600W


- (A) RS-232C(RS-485 option) Interface
- (B) AC Input Inlet
- (C) DC Output Terminal

## Product Dimension Guide

| | |
|---|---|
| ~300W | 213mm(W) x 88mm(H) x 362mm(D), 2U |
| 300W~600W | 300mm(W) x 150mm(H) x 465mm(D) |
| 600W~1.2kW | 426mm(W) x 177mm(H) x 505mm(D), 4U |
| 1.2kW~2.5kW | 426mm(W) x 265mm(H) x 650mm(D), 6U |
| 2.5kW~3kW | 426mm(W) x 356mm(H) x 650mm(D), 8U |
| 3kW~ | Rack Mount<br>600mm(W) x 800~2000mm(H) x 900mm(D) |



## Standard Features

- 3-Digit Display Resolution
- 16×2 Big-Character Type LCD Display
- CV/CC Mode
- Output ON/OFF Function
- Memory Save and Recall(Up to 5 operation states)
- RS-232C communication interface(RS-485 is optional)

## Options

- RS-232C cable
- RS-485 cable
- OVP, OCP(Remote Communication control only)
- Output ON/OFF signal control
- Analog Programming(Vout & Iout voltage programming) & Monitoring (Output Voltage & Current Monitoring) by 0~5V or 0~10V, Isolated type
- AC Power Cord(Other type)
- AC Input 110V ± 10%, 230V± 10%, 50~60Hz
- Rack Mount Support(Bracket and Shelf)

## Accessories

- AC Power Cord(Type F)
- Operating Manual(QR Code)
- Demo software program(QR Code)
- Banana to Alligator DC Output Cables(+,-)

## Line-Up and Specification

Models in bold with* mark are CE certified.

| | 1A | 2A | 3A | 4A | 5A | 10A | 20A | 30A | 50A | 80A | 100A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9V | - | - | - | - | - | OPE-910DI | OPE-920DI | OPE-930DI | OPE-950DI | - | - |
| 18V | - | - | - | - | - | OPE-1810DI | OPE-1820DI | OPE-1830DI | OPE-1850DI | OPE-1880DI | OPE-18100DI |
| 30V | - | - | - | - | - | OPE-3010DI | OPE-3020DI | OPE-3030DI | OPE-3050DI | OPE-3080DI | - |
| 50V | - | - | - | - | OPE-505DI | OPE-5010DI | OPE-5020DI | OPE-5030DI | OPE-5050DI | - | - |
| 80V | - | - | OPE-803DI | - | OPE-805DI | **OPE-8010DI*** | OPE-8020DI | OPE-8030DI | - | - | - |
| 100V | - | OPE-1002DI | OPE-1003DI | - | OPE-1005DI | OPE-10010DI | OPE-10020DI | - | - | - | - |
| 150V | OPE-1501DI | OPE-1502DI | OPE-1503DI | - | OPE-1505DI | OPE-15010DI | OPE-15020DI | OPE-15030DI | - | - | - |
| 200V | OPE-2001DI | OPE-2002DI | OPE-2003DI | - | OPE-2005DI | OPE-20010DI | OPE-20020DI | - | - | - | - |
| 250V | OPE-2501DI | OPE-2502DI | OPE-2503DI | - | OPE-2505DI | OPE-25010DI | - | - | - | - | - |
| 300V | OPE-3001DI | OPE-3002DI | OPE-3003DI | OPE-3004DI | OPE-3005DI | - | - | - | - | - | - |

※ Please contact us about un-listed capacity.

| | OPE-3010DI | OPE-3050DI |
|---|---|---|
| Output rating | 0~30V, 0~10A<br>2CH | 0~30V, 0~50A<br>2CH |
| Resolution<br>Programming / Readback<br>Display Meter | <br>≤ 7.5mV / ≤ 4mA<br>100mV / 100mA | <br>≤ 7.5mV / ≤ 15mA<br>100mV / 100mA |
| Programming Accuracy(@25℃±5℃)±(%of output + offset)<br>Voltage<br>Current | <br>0.2% + 200mV<br>0.2% + 50mA | <br>0.2% + 200mV<br>0.2% + 250mA |
| Read-Back Accuracy(@25℃±5℃)±(%of output + offset)<br>Voltage<br>Current | <br>0.2% + 200mV<br>0.2% + 50mA | <br>0.2% + 200mV<br>0.2% + 250mA |
| Ripple & Noise | ≤ 2mVp-p, ≤ 3mArms | ≤ 2mVp-p, ≤ 10mArms |
| Load Regulation | 0.01% + 4mV, 0.01% + 1mA | 0.01% + 8mV, 0.01% + 5mA |
| Line Regulation | 0.01% + 4mV, 0.01% + 2mA | 0.01% + 8mV, 0.01% + 5mA |
| Command Processing Time | < 20ms | < 20ms |
| Voltage Programming Speed(No load)<br>Rising time<br>Falling time | <br>≤ 120ms<br>≤ 3.6s | <br>≤ 120ms<br>≤ 3.6s |
| Dimension(W x H x D / mm) | 300 x 150 x 465 | 426 x 265 x 650(8U) |
| Transient Response Time | Less than 50μs for output to recover to with in 15mV Following a change in output current full load to half load or vice versa | |
| Common detail | RS-232C | |

# OPS Series

## Linear Type Programmable DC Power Supply

## High Precision, High Responsibility, High Efficiency, Single Channel

OPS Series is high efficiency, high performance programmable DC power supply with RS-232C & GPIB(IEEE-488.2, option) interface based on SCPI(Standard Commands for Programmable instrument) protocol.
In addition, It is designed to be equipped in 3U x Half of 19inch wide rack.

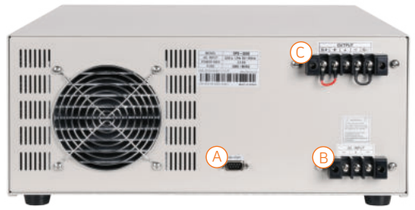
### 90 ~ 300W



1. OVP Protection Key
2. OCP Protection Key
3. IO/Local & Remote Key
4. Lock Key
5. Store or Calibration Key
6. Recall or Factory Key
7. Output ON/OFF Key
8. Voltage/Current Choice or Limit Display Key
9. Voltage/Current Control Encoder
10. Step Setting Key(Cycling Mode)
11. Sequence Setting Key(Cycling Mode)
12. Repeat Setting Key(Cycling Mode)
13. Run/Stop Key(Cycling Mode)
14. Error Check Key
15. Menu Escape Key
16. Left Cursor Key
17. Right Cursor Key
18. Power ON/OFF Key
19. Remote V(+) Sensing Input Terminal
20. + Output Terminal
21. - Output Terminal
22. Remote V(-) Sensing Input Key
23. Earth Ground

(A) AC Input Inlet
(B) GPIB(Option) Interface
(C) RS-232C Interface

### 600W ~ 1.2kW


(A) RS-232C Interface
(B) AC Input terminal
(C) DC Output terminal
*GPIB interface is optional

## Product Dimension Guide

| | |
|---|---|
| ~300W | 213mm(W) x 132mm(H) x 362mm(D) |
| 300W~600W | 300mm(W) x 150mm(H) x 465mm(D) |
| 600W~1.2kW | 426mm(W) x 177mm(H) x 505mm(D) |
| 1.2kW~2.5kW | 426mm(W) x 265mm(H) x 650mm(D), 6U |
| 2.5kW~3kW | 426mm(W) x 356mm(H) x 650mm(D), 8U |
| 3kW~ | Rack Mount<br>600mm(W) x 800~2000mm(H) x 900mm(D) |

# Cycling Test!

## Without S/W, Users can conduct cycling test by OPS Series.

Cycling Mode in OPS Series supports enough memory up to 100 steps which can set slope and delay time of voltage and current. Users can construct reliability test system and run it for long hours without Window Application. Beside of Reliability tests, Different voltages and currents can be supplied to the mechanical device and facility at right time

## Standard Features

- 5-Digit Display Resolution
- 16×1 Big-Character Type LCD Display
- Adjustment Encoder For Voltage and Current setting
- CV/CC Mode
- Remote Voltage-Sensing(Voltage drop compensation)
- OVP, OCP Protection Mode
- Output ON/OFF Function
- Panel Lock Function
- Memory Save and Recall Up to 10 operation states
- Save and Check up to 10 error messages
- Self-Diagnosis Test Mode
- Cycling Mode(Voltage, Current slope and Delay time up to 100 slots)
- Calibration Function(Manual and PC)
- Factory Mode(Last state, Calibration back-up etc)
- Half of 19inch wide x 3U Size(Under 300W)
- RS-232C Communication(GPIB is optional)
- Single Phase, AC Input 220VAC ±10%

## Options

- GPIB communication
- GPIB cable
- RS-232C cable
- Output ON/OFF signal control
- AC Power Cord (Other type)
- AC Input 110V ± 10%, 230V± 10%, 50~60Hz
- Rack Mount Support (Bracket and Shelf)

## Accessories

- AC Power Cord(Type F)
- Operating Manual(QR Code)
- Demo software program(QR Code)
- Banana to Alligator DC Output Cables(+,-)

## Line-Up and Specification

| | 1A | 2A | 3A | 5A | 10A | 20A | 30A | 50A | 80A | 100A | 150A | 200A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9V | - | - | - | - | OPS-910 | OPS-920 | OPS-930 | OPS-950 | - | OPS-9100 | OPS-9150 | OPS-9200 |
| 18V | - | - | - | OPS-185 | OPS-1810 | OPS-1820 | OPS-1830 | OPS-1850 | OPS-1880 | OPS-18100 | OPS-18150 | OPS-18200 |
| 30V | - | - | OPS-303 | OPS-305 | OPS-3010 | OPS-3020 | OPS-3030 | OPS-3050 | OPS-3080 | OPS-30100 | - | - |
| 50V | - | - | OPS-503 | OPS-505 | OPS-5010 | OPS-5020 | OPS-5030 | OPS-5050 | OPS-5080 | OPS-50100 | - | - |
| 80V | OPS-801 | OPS-802 | OPS-803 | OPS-805 | OPS-8010 | OPS-8020 | OPS-8030 | OPS-8050 | - | - | - | - |
| 100V | OPS-1001 | OPS-1002 | OPS-1003 | OPS-1005 | OPS-10010 | OPS-10020 | OPS-10030 | OPS-10050 | - | - | - | - |
| 150V | OPS-1501 | OPS-1502 | OPS-1503 | OPS-1505 | OPS-15010 | OPS-15020 | OPS-15030 | - | - | - | - | - |
| 200V | OPS-2001 | OPS-2002 | OPS-2003 | OPS-2005 | OPS-20010 | OPS-20020 | - | - | - | - | - | - |
| 250V | OPS-2501 | OPS-2502 | OPS-2503 | OPS-2505 | OPS-25010 | OPS-25020 | - | - | - | - | - | - |
| 300V | OPS-3001 | OPS-3002 | OPS-3003 | OPS-3005 | OPS-30010 | - | - | - | - | - | - | - |

※ Please contact us about un-listed capacity.

# OPS Series

| | OPS-303 | OPS-305 | OPS-307 | OPS-3010 |
|---|---|---|---|---|
| **Output rating** | 0~30V, 0~3A | 0~30V, 0~5A | 0~30V, 0~7A | 0~30V, 0~10A |
| **Resolution** | | | | |
| Programming / Readback | ≤ 250μV / ≤ 30μA | ≤ 250μV / ≤ 50μA | ≤ 250μV / ≤ 70μA | ≤ 250μV / ≤ 100μA |
| Display Meter | 1mV / 100μA | 1mV / 100μA | 1mV / 1mA | 1mV / 1mA |
| **Programming Accuracy(@25℃±5℃)±(%of output + offset)** | | | | |
| Voltage | 0.05% + 10mV | 0.05% + 10mV | 0.05% + 10mV | 0.05% + 10mV |
| Current | 0.15% + 5mA | 0.15% + 5mA | 0.2% + 10mA | 0.2% + 10mA |
| **Read-Back Accuracy(@25℃±5℃)±(%of output + offset)** | | | | |
| Voltage | 0.05% + 5mV | 0.05% + 5mV | 0.05% + 5mV | 0.05% + 5mV |
| Current | 0.08% + 3mA | 0.08% + 3mA | 0.15% + 5mA | 0.15% + 5mA |
| **Ripple & Noise** | ≤ 2mVp-p, ≤ 2mArms | ≤ 2mVp-p, ≤ 2mArms | ≤ 2mVp-p, ≤ 2mArms | ≤ 2mVp-p, ≤ 2mArms |
| **Load Regulation** | 2mV, 500μA | 2mV, 500μA | 2mV, 500μA | 2mV, 500μA |
| **Line Regulation** | 500μV, 500μA | 500μV, 500μA | 500μV, 500μA | 500μV, 1mA |
| **Command Processing Time** | < 32ms | < 32ms | < 32ms | < 32ms |
| **Voltage Programming Speed(No load)** | | | | |
| Rising time | ≤ 7.5V/ms | ≤ 7.5V/ms | ≤ 7.5V/ms | ≤ 7.5V/ms |
| Falling time | ≤ 3V/ms | ≤ 3V/ms | ≤ 3V/ms | ≤ 3V/ms |
| **Dimension(W x H x D / mm)** | 213 x 132 x 370 | 213 x 132 x 370 | 213 x 132 x 370 | 213 x 132 x 370 |
| **Transient Response Time** | Less than 50μs for output to recover to within 15mV Following a change in output current full load to half load or vice versa | | | |

| | OPS-503 | OPS-505 | OPS-801 | OPS-802 |
|---|---|---|---|---|
| **Output rating** | 0~50V, 0~3A | 0~50V, 0~5A | 0~80V, 0~1A | 0~80V, 0~2A |
| **Resolution** | | | | |
| Programming / Readback | ≤ 500μV / ≤ 30μA | ≤ 500μV / ≤ 50μA | ≤ 800μV / ≤ 10μA | ≤ 800μV / ≤ 20μA |
| Display Meter | 1mV / 100μA | 1mV / 100μA | 10mV / 100μA | 10mV / 100μA |
| **Programming Accuracy(@25℃±5℃)±(%of output + offset)** | | | | |
| Voltage | 0.2% + 200mV | 0.2% + 200mV | 0.2% + 200mV | 0.2% + 300mV |
| Current | 0.2% + 50mA | 0.2% + 250mA | 0.2% + 500mA | 0.2% + 1A |
| **Read-Back Accuracy(@25℃±5℃)±(%of output + offset)** | | | | |
| Voltage | 0.05% + 6mV | 0.05% + 6mV | 0.05% + 18mV | 0.05% + 18mV |
| Current | 0.08% + 3mA | 0.08% + 3mA | 0.08% + 3mA | 0.08% + 3mA |
| **Ripple & Noise** | ≤ 3mVp-p, ≤ 2mArms | ≤ 3mVp-p, ≤ 2mArms | ≤ 6mVp-p, ≤ 2mArms | ≤ 6mVp-p, ≤ 2mArms |
| **Load Regulation** | 2mV, 500μA | 2mV, 500μA | 3mV, 500μA | 3mV, 500μA |
| **Line Regulation** | 500μV, 500μA | 500μV, 500μA | 1mV, 500μA | 1mV, 500μA |
| **Command Processing Time** | < 32ms | < 32ms | < 32ms | < 32ms |
| **Voltage Programming Speed(No load)** | | | | |
| Rising time | ≤ 7.5V/ms | ≤ 7.5V/ms | ≤ 7.5V/ms | ≤ 7.5V/ms |
| Falling time | ≤ 3V/ms | ≤ 3V/ms | ≤ 3V/ms | ≤ 3V/ms |
| **Dimension(W x H x D / mm)** | 213 x 132 x 370 | 213 x 132 x 370 | 213 x 132 x 370 | 213 x 132 x 370 |
| **Transient Response Time** | Less than 50μs for output to recover to within 15mV Following a change in output current full load to half load or vice versa | | | |
| Common details | RS-232C | | | |
| OPTION | GPIB communication, GPIB cable, RS-232C cable, Output ON/OFF signal control, AC Power Cord(Other type), AC Input 110V ± 10%, 230V± 10%, 50~60Hz, Rack Mount Support(Bracket and Shelf) | | | |

※ Please contact us about un-listed capacity.

| | OPS-803 | OPS-1001 | OPS-1002 | OPS-1003 |
|---|---|---|---|---|
| **Output rating** | 0~80V, 0~3A | 0~100V, 0~1A | 0~100V, 0~2A | 0~100V, 0~3A |
| **Resolution** | | | | |
| Programming / Readback | ≤ 800μV / ≤ 30μA | ≤ 1mV / ≤ 10μA | ≤ 1mV / ≤ 20μA | ≤ 1mV / ≤ 30μA |
| Display Meter | 10mV / 100μA | 10mV / 100μA | 10mV / 100μA | 10mV / 100μA |
| **Programming Accuracy(@25℃±5℃)±(%of output + offset)** | | | | |
| Voltage | 0.05% + 35mV | 0.05% + 40mV | 0.05% + 40mV | 0.05% + 40mV |
| Current | 0.15% + 5mA | 0.15% + 5mA | 0.15% + 5mA | 0.15% + 5mA |
| **Read-Back Accuracy(@25℃±5℃)±(%of output + offset)** | | | | |
| Voltage | 0.05% + 18mV | 0.05% + 20mV | 0.05% + 20mV | 0.05% + 20mV |
| Current | 0.08% + 3mA | 0.08% + 3mA | 0.08% + 3mA | 0.08% + 3mA |
| **Ripple & Noise** | ≤ 3mVp-p, ≤ 2mArms | ≤ 3mVp-p, ≤ 2mArms | ≤ 6mVp-p, ≤ 2mArms | ≤ 6mVp-p, ≤ 2mArms |
| **Load Regulation** | 2μV, 500μA | 2μV, 500μA | 3μV, 500μA | 3μV, 500μA |
| **Line Regulation** | 500μV, 500μA | 500μV, 500μA | 1mV, 500μA | 1mV, 500μA |
| **Command Processing Time** | < 32ms | < 32ms | < 32ms | < 32ms |
| **Voltage Programming Speed(No load)** | | | | |
| Rising time | ≤ 7.5V/ms | ≤ 7.5V/ms | ≤ 7.5V/ms | ≤ 7.5V/ms |
| Falling time | ≤ 3V/ms | ≤ 3V/ms | ≤ 3V/ms | ≤ 3V/ms |
| **Dimension(W x H x D / mm)** | 213 x 132 x 370 | 213 x 132 x 370 | 213 x 132 x 370 | 213 x 132 x 370 |
| **Transient Response Time** | Less than 50μs for output to recover to within 15mV Following a change in output current full load to half load or vice versa | | | |

| | OPS-1501 | OPS-1502 | OPS-2001 | OPS-3001 |
|---|---|---|---|---|
| **Output rating** | 0~150V, 0~1A | 0~150V, 0~2A | 0~200V, 0~1A | 0~300V, 0~1A |
| **Resolution** | | | | |
| Programming / Readback | ≤ 1.5mV / ≤ 10μA | ≤ 1.5mV / ≤ 20μA | ≤ 2mV / ≤ 10μA | ≤ 3mV / ≤ 10μA |
| Display Meter | 10mV / 100μA | 10mV / 100μA | 10mV / 100μA | 10mV / 100μA |
| **Programming Accuracy(@25℃±5℃)±(%of output + offset)** | | | | |
| Voltage | 0.05% + 50mV | 0.05% + 50mV | 0.05% + 75mV | 0.05% + 95mV |
| Current | 0.15% + 5mA | 0.15% + 5mA | 0.15% + 5mA | 0.15% + 5mA |
| **Read-Back Accuracy(@25℃±5℃)±(%of output + offset)** | | | | |
| Voltage | 0.05% + 25mV | 0.05% + 25mV | 0.05% + 40mV | 0.05% + 50mV |
| Current | 0.08% + 3mA | 0.08% + 3mA | 0.08% + 3mA | 0.08% + 3mA |
| **Ripple & Noise** | ≤ 0.01%mVrms, ≤ 3mArms | ≤ 0.01%mVrms, ≤ 3mArms | ≤ 0.01%mVrms, ≤ 3mArms | ≤ 0.01%mVrms, ≤ 3mArms |
| **Load Regulation** | 4mV, 500μA | 4mV, 500μA | 4mV, 500μA | 3mV, 500μA |
| **Line Regulation** | 1mV, 500μA | 1mV, 500μA | 1mV, 500μA | 1mV, 500μA |
| **Command Processing Time** | < 32ms | < 32ms | < 32ms | < 32ms |
| **Voltage Programming Speed(No load)** | | | | |
| Rising time | ≤ 7.5V/ms | ≤ 7.5V/ms | ≤ 7.5V/ms | ≤ 7.5V/ms |
| Falling time | ≤ 3V/ms | ≤ 3V/ms | ≤ 3V/ms | ≤ 3V/ms |
| **Dimension(W x H x D / mm)** | 213 x 132 x 370 | 213 x 132 x 370 | 213 x 132 x 370 | 213 x 132 x 370 |
| **Transient Response Time** | Less than 50μs for output to recover to within 15mV Following a change in output current full load to half load or vice versa | | | |
| Common details | RS-232C | | | |
| OPTION | GPIB communication, GPIB cable, RS-232C cable, Output ON/OFF signal control, AC Power Cord(Other type), AC Input 110V ± 10%, 230V± 10%, 50~60Hz, Rack Mount Support(Bracket and Shelf) | | | |

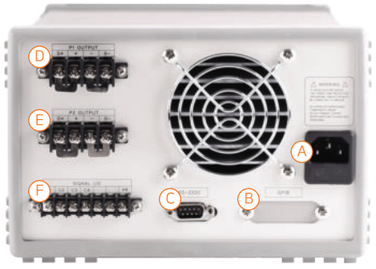
※ Please contact us about un-listed capacity.

# OPM Series

## Linear Type Programmable DC Power Supply / High Precision, High Responsibility, High Efficiency / Dual Channels(Standard) & Multi-Channels up to 255CH

OPM Series is high precision, high accuracy programmable DC power supply with RS-232C & GPIB(IEEE-488.2, option) interface based on SCPI(Standard Commands for Programmable instrument) protocol.
In addition, It is designed to be equipped in 3U x Half of 19inch wide rack.

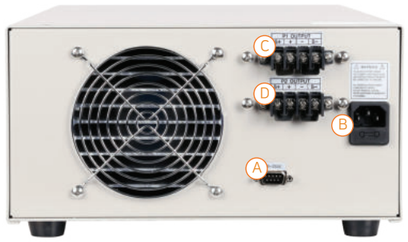
### 90 ~ 300W


1. OVP/OCP Protection or Calibration Key
2. Memory or Factory Key
3. IO/Local & Remote Key
4. Output ON/OFF Key
5. P1, P2 Channel Selection Key
6. Voltage/Current Choice or Limit Display Key
7. Error Check Key
8. Menu Escape Key
9. Parallel Output Key
10. Tracking Mode Key
11. Left Cursor Key
12. Right Cursor Key
13. Voltage/Current Control Encoder
14. P1 + Output Terminal
15. P1 - Output Terminal
16. P2 + Output Terminal
17. P2 - Output Terminal
18. Earth Ground
19. Power ON/OFF Key

- (A) AC Input Inlet
- (B) GPIB(Option) Interface
- (C) RS-232C Interface
- (D) P1 Output Termial & Sensing Input Terminal
- (E) P2 Output Termial & Sensing Input Terminal
- (F) Signal Input/Output Termial

### 300W ~ 600W


- (A) RS-232C Interface
- (B) AC Input terminal
- (C) P1 DC Output terminal
- (D) P2 DC Output terminal

*GPIB Interface is optional

## Product Dimension Guide

| | |
|---|---|
| ~300W | 213mm(W) x 132mm(H) x 370mm(D), 3U |
| 300W~600W | 300mm(W) x 150mm(H) x 465mm(D) |
| 600W~1.2kW | 426mm(W) x 177mm(H) x 505mm(D), 4U |
| 1.2kW~2.5kW | 426mm(W) x 265mm(H) x 650mm(D), 6U |
| 2.5kW~3kW | 426mm(W) x 356mm(H) x 650mm(D), 8U |
| 3kW ~ | Rack Mount<br>600mm(W) x 800~2000mm(H) x 900mm(D) |



## TRACKING MODE

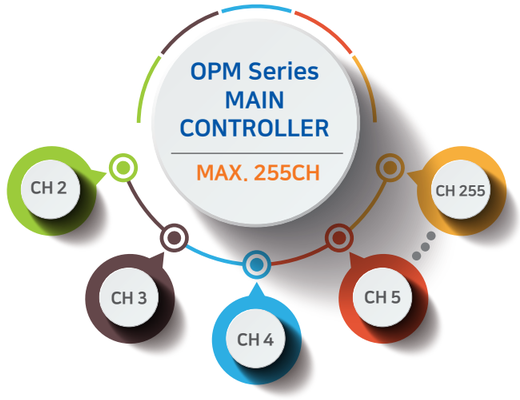
**User can control two channels at the same time by Tracking Mode function.**

It enables two channels to be linked together by pressing one button and enable users set output voltage or current at the same time.

## STORE / RECALL

**Do you want to configure many channels with precise device?**

OPM Series is designed to easily configure multi-channel outputs when it is developed. Conventional methods of simply connecting a single product in parallel and controlling it through a Windows application have been costly and constructing redundant controllers, displays, and communication interfaces etc. But, OPM Series has solved these problems, built a reasonable and efficient production line and inspection line through its high-precision multi-channels.




## Standard Features

- 5-Digit Display Resolution
- 16×1 Big-Character Type LCD Display
- Adjustment Encoder For Voltage and Current setting
- CV/CC Mode
- Remote Voltage-Sensing(Voltage drop compensation)
- OVP, OCP Protection Mode
- Output ON/OFF Function
- Panel Lock Function
- Memory Save and Recall Up to 10 operation states
- Save and Check up to 10 error messages
- Self-Diagnosis Test Mode
- Calibration Function(Manual and PC)
- Factory Mode(Last state, Calibration back-up etc)
- Half of 19inch wide x 3U Size(Under 300W)
- RS-232C Communication(GPIB is optional)
- Single Phase, AC Input 220VAC ±10%

## Options

- GPIB communication
- GPIB cable
- RS-232C cable
- Output ON/OFF signal control
- AC Power Cord(Other type)
- AC Input 110V ± 10%, 230V± 10%, 50~60Hz
- Rack Mount Support(Bracket and Shelf)

## Accessories

- AC Power Cord(Type F)
- Operating Manual(QR Code)
- Demo software program(QR Code)
- Banana to Alligator DC Output Cables(+,-)

## Line-Up and Specification

| | 1A | 2A | 3A | 5A | 7A | 10A | 15A | 20A | 30A | 50A |
|---|---|---|---|---|---|---|---|---|---|---|
| 9V | - | - | - | OPM-95D | - | OPM-910D | OPM-915D | OPM-920D | OPM-930D | - |
| 18V | OPM-181D | - | OPM-183D | OPM-185D | - | OPM-1810D | - | OPM-1820D | OPM-1830D | - |
| 30V | OPM-301D | - | OPM-303D | OPM-305D | OPM-307D | OPM-3010D | - | OPM-3020D | OPM-3030D | OPM-3050D |
| 50V | OPM-501D | OPM-501D | OPM-503D | OPM-505D | OPM-507D | OPM-5010D | - | OPM-5020D | OPM-5030D | OPM-5050D |
| 60V | OPM-601D | OPM-601D | OPM-603D | OPM-605D | - | OPM-6010D | - | - | - | - |
| 80V | OPM-801D | OPM-801D | OPM-803D | OPM-805D | OPM-807D | OPM-8010D | OPM-8015D | OPM-8020D | OPM-8030D | - |
| 100V | OPM-1001D | OPM-1001D | OPM-1003D | OPM-1005D | OPM-1007D | OPM-10010D | OPM-10015D | OPM-10020D | - | - |
| 150V | OPM-1501D | OPM-1501D | OPM-1503D | OPM-1505D | OPM-1507D | OPM-15010D | OPM-15015D | - | - | - |
| 200V | OPM-2001D | OPM-2001D | OPM-2003D | OPM-2005D | OPM-2007D | OPM-20010D | - | - | - | - |
| 250V | OPM-2501D | OPM-2501D | OPM-2503D | OPM-2505D | - | OPM-25010D | - | - | - | - |
| 300V | OPM-3001D | OPM-3001D | OPM-3003D | OPM-3005D | - | - | - | - | - | - |

◎ Please contact us about un-listed capacity.

# OPM Series

| | OPM-93D | OPM-181D | OPM-183D | OPM-185D |
|---|---|---|---|---|
| **Output rating** | 0~9V, 0~3A, 2CH | 0~18V, 0~1A, 2CH | 0~18V, 0~3A, 2CH | 0~18V, 0~5A, 2CH |
| **Resolution** | | | | |
| Programming / Readback | ≤ 100μV / ≤ 30μA | ≤ 150μV / ≤ 10μA | ≤ 150μV / ≤ 30μA | ≤ 150μV / ≤ 50μA |
| Display Meter | 1mV / 100μA | 1mV / 100μA | 1mV / 100μA | 1mV / 100μA |
| **Programming Accuracy(@25℃±5℃)±(%of output + offset)** | | | | |
| Voltage | 0.05% + 3mV | 0.05% + 3mV | 0.05% + 5mV | 0.05% + 5mV |
| Current | 0.15% + 5mA | 0.15% + 5mA | 0.15% + 5mA | 0.15% + 5mA |
| **Read-Back Accuracy(@25℃±5℃)±(%of output + offset)** | | | | |
| Voltage | 0.05% + 1.5mV | 0.05% + 2.5mV | 0.05% + 2.5mV | 0.05% + 2.5mV |
| Current | 0.08% + 3mA | 0.08% + 3mA | 0.08% + 3mA | 0.08% + 3mA |
| **Ripple & Noise** | ≤ 2mVp-p, ≤ 2mArms | ≤ 2mVp-p, ≤ 2mArms | ≤ 2mVp-p, ≤ 2mArms | ≤ 2mVp-p, ≤ 2mArms |
| **Load Regulation** | 2mV, 500μA | 2mV, 500μA | 2mV, 500μA | 2mV, 500μA |
| **Line Regulation** | 500μV, 500μA | 500μV, 500μA | 500μV, 500μA | 500μV, 500μA |
| **Command Processing Time** | < 47ms | < 47ms | < 47ms | < 47ms |
| **Voltage Programming Speed(No load)** | | | | |
| Rising time | ≤ 7.5V/ms | ≤ 7.5V/ms | ≤ 7.5V/ms | ≤ 7.5V/ms |
| Falling time | ≤ 3V/ms | ≤ 3V/ms | ≤ 3V/ms | ≤ 3V/ms |
| **Dimension(W x H x D / mm)** | 213 x 132 x 370 | 213 x 132 x 370 | 213 x 132 x 370 | 213 x 132 x 370 |
| **Transient Response Time** | Less than 50μs for output to recover to within 15mV Following a change in output current full load to half load or vice versa | | | |

| | OPM-303D | OPM-305D | OPM-501D | OPM-503D |
|---|---|---|---|---|
| **Output rating** | 0~30V, 0~3A, 2CH | 0~30V, 0~5A, 2CH | 0~50V, 0~1A, 2CH | 0~50V, 0~3A, 2CH |
| **Resolution** | | | | |
| Programming / Readback | ≤ 250μV / ≤ 30μA | ≤ 250μV / ≤ 50μA | ≤ 500μV / ≤ 10μA | ≤ 500μV / ≤ 30μA |
| Display Meter | 1mV / 100μA | 1mV / 100μA | 1mV / 100μA | 1mV / 100μA |
| **Programming Accuracy(@25℃±5℃)±(%of output + offset)** | | | | |
| Voltage | 0.05% + 10mV | 0.05% + 10mV | 0.05% + 12mV | 0.05% + 12mV |
| Current | 0.15% + 5mA | 0.15% + 5mA | 0.15% + 5mA | 0.15% + 5mA |
| **Read-Back Accuracy(@25℃±5℃)±(%of output + offset)** | | | | |
| Voltage | 0.05% + 5mV | 0.05% + 5mV | 0.05% + 6mV | 0.05% + 6mV |
| Current | 0.08% + 3mA | 0.08% + 3mA | 0.08% + 3mA | 0.08% + 3mA |
| **Ripple & Noise** | ≤ 2mVp-p, ≤ 2mArms | ≤ 2mVp-p, ≤ 2mArms | ≤ 3mVp-p, ≤ 2mArms | ≤ 3mVp-p, ≤ 2mArms |
| **Load Regulation** | 2mV, 500μA | 2mV, 500μA | 2mV, 500μA | 2mV, 500μA |
| **Line Regulation** | 500μV, 500μA | 500μV, 500μA | 500μV, 500μA | 500μV, 500μA |
| **Command Processing Time** | < 47ms | < 47ms | < 47ms | < 47ms |
| **Voltage Programming Speed(No load)** | | | | |
| Rising time | ≤ 7.5V/ms | ≤ 7.5V/ms | ≤ 7.5V/ms | ≤ 7.5V/ms |
| Falling time | ≤ 3V/ms | ≤ 3V/ms | ≤ 3V/ms | ≤ 3V/ms |
| **Dimension(W x H x D / mm)** | 213 x 132 x 370 | 213 x 132 x 370 | 213 x 132 x 370 | 213 x 132 x 370 |
| **Transient Response Time** | Less than 50μs for output to recover to within 15mV Following a change in output current full load to half load or vice versa | | | |
| Common details | RS-232C | | | |
| OPTION | GPIB communication, GPIB cable, RS-232C cable, Output ON/OFF signal control, AC Power Cord(Other type),<br>AC Input 110V ± 10%, 230V± 10%, 50~60Hz, Rack Mount Support(Bracket and Shelf) | | | |

| | OPM-801D | OPM-803D | OPM-1501D |
|---|---|---|---|
| **Output rating** | 0~80V, 0~1A, 2CH | 0~80V, 0~3A, 2CH | 0~150V, 0~1A, 2CH |
| **Resolution** | | | |
| Programming / Readback | ≤ 800μV / ≤ 10μA | ≤ 1mV / ≤ 10μA | ≤ 1.5mV / ≤ 10μA |
| Display Meter | 10mV / 100μA | 10mV / 100μA | 10mV / 100μA |
| **Programming Accuracy(@25℃±5℃)±(%of output + offset)** | | | |
| Voltage | 0.05% + 35mV | 0.05% + 40mV | 0.05% + 50mV |
| Current | 0.15% + 5mA | 0.15% + 5mA | 0.15% + 5mA |
| **Read-Back Accuracy(@25℃±5℃)±(%of output + offset)** | | | |
| Voltage | 0.05% + 18mV | 0.05% + 20mV | 0.05% + 25mV |
| Current | 0.08% + 3mA | 0.08% + 3mA | 0.08% + 3mA |
| **Ripple & Noise** | ≤ 6mVp-p, ≤ 2mArms | ≤ 0.01%mVrms, ≤ 2mArms | ≤ 0.015%mVrms, ≤ 3mArms |
| **Load Regulation** | 3mV, 500μA | 3mV, 500μA | 4mV, 500μA |
| **Line Regulation** | 1mV, 500μA | 1mV, 500μA | 1mV, 500μA |
| **Command Processing Time** | < 47ms | < 47ms | < 47ms |
| **Voltage Programming Speed(No load)** | | | |
| Rising time | ≤ 7.5V/ms | ≤ 7.5V/ms | ≤ 7.5V/ms |
| Falling time | ≤ 3V/ms | ≤ 3V/ms | ≤ 3V/ms |
| **Dimension(W x H x D / mm)** | 213 x 132 x 370 | 300 x 150 x 465 | 213 x 132 x 370 |
| **Transient Response Time** | Less than 50μs for output to recover to within 15mV Following a change in output current full load to half load or vice versa | | |

| | OPM-1503D | OPM-2001D | OPM-3001D |
|---|---|---|---|
| **Output rating** | 0~150V, 0~3A, 2CH | 0~200V, 0~1A, 2CH | 0~300V, 0~1A, 2CH |
| **Resolution** | | | |
| Programming / Readback | ≤ 1.5mV / ≤ 30μA | ≤ 2mV / ≤ 10μA | ≤ 3mV / ≤ 10μA |
| Display Meter | 10mV / 100μA | 10mV / 100μA | 10mV / 100μA |
| **Programming Accuracy(@25℃±5℃)±(%of output + offset)** | | | |
| Voltage | 0.05% + 50mV | 0.05% + 75mV | 0.05% + 95mV |
| Current | 0.15% + 5mA | 0.15% + 5mA | 0.15% + 5mA |
| **Read-Back Accuracy(@25℃±5℃)±(%of output + offset)** | | | |
| Voltage | 0.05% + 25mV | 0.05% + 40mV | 0.05% + 50mV |
| Current | 0.08% + 3mA | 0.08% + 3mA | 0.08% + 3mA |
| **Ripple & Noise** | ≤ 0.01%mVrms, ≤ 3mArms | ≤ 0.01%mVrms, ≤ 3mArms | ≤ 0.01%mVrms, ≤ 3mArms |
| **Load Regulation** | 4mV, 500μA | 4mV, 500μA | 4mV, 500μA |
| **Line Regulation** | 1mV, 500μA | 1mV, 500μA | 1mV, 500μA |
| **Command Processing Time** | < 47ms | < 47ms | < 47ms |
| **Voltage Programming Speed(No load)** | | | |
| Rising time | ≤ 7.5V/ms | ≤ 7.5V/ms | ≤ 7.5V/ms |
| Falling time | ≤ 3V/ms | ≤ 3V/ms | ≤ 3V/ms |
| **Dimension(W x H x D / mm)** | 426 x 177 x 505 | 300 x 150 x 465 | 300 x 150 x 465 |
| **Transient Response Time** | Less than 50μs for output to recover to within 15mV Following a change in output current full load to half load or vice versa | | |
| Common details | RS-232C | | |
| OPTION | GPIB communication, GPIB cable, RS-232C cable, Output ON/OFF signal control, AC Power Cord(Other type),<br>AC Input 110V ± 10%, 230V± 10%, 50~60Hz, Rack Mount Support(Bracket and Shelf) | | |

# OPX Series

## Multi Channels Programmable DC Power Supply

### Mobile device Test System and Solution

OPX series is multi-channel programmable DC Power Supply that optimized and designed for mobile testing equipment.
It provides excellent precision and high resolution with compact size. This model supports RS-232C, GPIB and TCP/IP (option) for remote control.

## OPX-93D

OPX-93D is 0~9V / 0~3A, Dual Output Programmable DC Power Supply with 1/2-19inch 3U height.  This high accuracy equipment provides resolution up to 5-digit and also provides strong protections and limit functions including OVP,OCP,UVL,OVL,UCL,OCL.



### Standard Features

- Dual Channels, 0~9V/0~3A each  with 1mV/100uA Resolution, 5-Digit
- 16×1 Big-Character Type LCD Display (each channel)
- Low Ripple & noise(2mVp-p / 2mArms)
- Programming Accuracy(0.05%+5mV / 0.15%+5mA)
- Readback Accuracy(0.05%+2.5mV / 0.08%+3mA)
- CV/CC Mode
- Remote Voltage-Sensing(Voltage drop compensation)
- OVP, OCP Protection Mode, DC-Fan fail
- UVL(Under Voltage Lock), OVL(Over Voltage Lock), UCL(Under Current Lock), OCL(Over Current Lock)
- Calibration Function(Manual and PC)
- Front Panel Lock Function
- Memory Save & Recall Function(Up to 10 operation states)
- 11 diverse Factory Modes(User memory clear, Last state, Calibration- Restore etc)
- RS-232C, GPIB remote interface
- AC Input Single phase  110Vac/220Vac ±10%
- Dimensions : 213mm(W) x 133mm(H) x 392mm(D)
- Accessories : Operating Manual(QR code), AC input cord 1pc(1.5meter), 1 Spare Fuse(AC Inlet Built-in), 2 Short bars



## OPX-93E(F)

OPX-93E(F) is multi-channel(2/4/6/8channels) programmable DC Power Supply that can output 0~9V/0~3A for each channel.
This model is suitable for who are looking for lower cost model without display.

### Standard Features

- 2/4/6/8 channels, 0~9V/0~3A each with 1mV/100uA Resolution
- Low Ripple & noise(2mVp-p / 2mArms)
- Programming Accuracy(1%+30mV)
- Readback Accuracy(1%+30mV / 1%+20mA)
- CV/CC Mode
- Remote Voltage-Sensing(Voltage drop compensation)
- OVP, OCP Protection Mode, DC-Fan fail
- UVL(Under Voltage Lock), OVL(Over Voltage Lock), UCL (Under Current Lock), OCL(Over Current Lock)
- Calibration Function(Manual and PC)
- Front Panel Lock Function
- Memory Save & Recall Function(Up to 10 operation states)
- Remote Interface: OPX-93E (RS232), OPX-93F (RS232 & TCP/IP)
- AC Input Single phase  110Vac/220Vac ±10%
- Dimensions : 250mm(W) x 220mm(H) x 430mm(D)
- Accessories : Operating Manual(QR code), AC input cord 1pc(1.5meter), 1 Spare Fuse(AC Inlet Built-in), 2 Short bars

## OPX-55SE

OPX-55SE is 8 Channels Programmable DC Power Supply with 1~5V& Fixed 5A with compact size(Only 130mm(W) x 345mm(H) x 130mm(D)).
It supports RS-232C interface based on SCPI  protocol and designed to optimize for mobile phone inspection equipment.
It makes it easier for users to replace or repair each channel by the benefit of module type.

### Standard Features

- 8 channels, 1~5V /Fixed 5A each with 10mV/10mA Resolution
- Modular type provides individual replacement or repair for each channel
- Low Ripple & noise(10mVrms)
- Programming Accuracy(1%+30mV)
- Readback Accuracy(1%+30mV / 1%+20mA)
- Remote Voltage-Sensing(Voltage drop compensation)
- Protection(OVP,OCP), UVL
- RMT LED light for communication status checking
- Remote Interface (RS-232C)
- Save and Check up to 10 error messages
- Calibration Function(Manual and PC)
- Dimensions : 130mm(W) x 345mm(H) x 130mm(D)
- Accessories : Operating Manual(QR code), Window Application Demo Program (QR code), AC input cord 1pc(1.5meter),Fuse 1pc(Built in AC input inlet), Output – sensing connection short bar

# LF Series

## Programmable DC Electronic Load

### Cost-Effective and 19inch Rack mount standard


## Standard Features

- 16 x 2 Big-Char Type LCD Display
- 5-Digit Resolution
- Protection : OVP, OCP, OPP, OTP, OVR, OCR
- Various mode : CC, CV, CR, CP, ON/OFF, Fuse test, Battery Test, Short, Cycling, Dynamic
- Easy Data checking(Volt, Curr, Watt, Time etc.)
- Input ON/OFF Key
- Front panel Key Lock function
- Excellent precision and high resolution
- Built-in Remote Sensing for Load Voltage(V-Sensing)
- Excellent load and line regulation
- Save and confirm up to 10 error messages
- Memory save and recall function(up to 10 operation states)
- Communication Interface : RS232, RS485 Standard(TCP/IP is optional)
- Compact Size : 600W in half of 19inch wide x 2U size

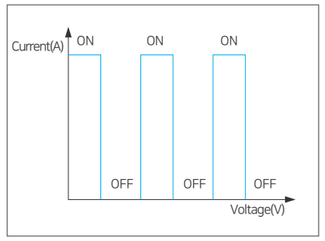

1. Menu Escape, Error, Protection Key
2. IO/Local & Remote Key
3. CC/CV Range Change Key
4. Display Page Change Key
5. Test Mode Setting Key
6. DC Input ON/OFF Key
7. Save, Recall, V-Sensing Key
8. Short Mode, Key Lock Key
9. Cycling Mode Run/Stop Key
10. Cycling Mode Setting Key
11. Dynamic Mode Run/Stop, Calibration Setting Key
12. Dynamic Mode, Factory Mode Setting Key
13. Left/Right Cursor, Menu Change Key
14. Power ON/OFF Key
15. LCD Display
16. Control Encoder

| Model | LF300-A | |
|---|---|---|
| Operating Range (@0˚C~ 40˚C) | Voltage | 1~150V |
| | Current | 0~60A |
| | Max Power | 300W at40 ˚ C(derated to 225W at 55 ˚ C) |
| Display Resolution | 5-Digit | |
| Resolution | Voltage | 10mV(H) / 1mV(L) |
| | Current | 1mA(H) / 100uA(L) |
| | Watt | 10mW(0~300W) |
| | Resistor | 100mΩ(0.1~3000Ω) |
| Mode | CC, CV, CR, CP, On/Off, Fuse, Short, Dynamic, Cycling, Baterry Test | |
| Protection | OVP, OCP, OPP, OTP, OVR, OCR | |
| Remote Interface | RS-232C, RS-485, TCP/IP (Option) | |
| Slew Rate (typical values: 5%~95%) | Typical value : 5% ~ 95%<br>CC : <200μs(0~60A) CV : <2ms(0~150V) | |
| Ripple & Noise | Current | 4mA(rms) / 40mA(p-p) |
| | Voltage | 6mV(rms) |
| AC Input | 110/220V ± 10%, 50~60Hz/300mA | |
| Size | 213mm(W) * 88mm(H) * 350mm(D) | |
| Weight | Net weight : about 6KG<br>Gross weight : about 7KG | |

## Line-Up and Specification

| LF_A(150V) | | | | LF_B(300V) | | | | LF_C(600V) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MODEL | V/A | WATT | SIZE(mm) | MODEL | V/A | WATT | SIZE(mm) | MODEL | V/A | WATT | SIZE(mm) |
| LF150-A | 150V/30A | 150 | W213*H88*D350 | LF300-B | 300V/20A | 300 | W213*H88*D350 | LF300-C | 600V/10A | 300 | W213*H88*D350 |
| LF300-A | 150V/60A | 300 | W213*H88*D350 | LF600-B | 300V/40A | 600 | W213*H88*D450 | LF600-C | 600V/20A | 600 | W213*H88*D450 |
| LF600-A | 150V/120A | 600 | W213*H88*D450 | LF900-B | 300V/60A | 900 | W426*H88*D550 | LF900-C | 600V/30A | 900 | W426*H88*D550 |
| LF900-A | 150V/180A | 900 | W426*H88*D550 | LF1200-B | 300V/80A | 1200 | W426*H88*D550 | LF1200-C | 600V/40A | 1200 | W426*H88*D550 |
| LF1200-A | 150V/240A | 1200 | W426*H88*D550 | LF1500-B | 300V/100A | 1500 | W426*H176*D600 | LF1500-C | 600V/50A | 1500 | W426*H176*D600 |
| LF1500-A | 150V/300A | 1500 | W426*H176*D600 | LF1800-B | 300V/120A | 1800 | W426*H176*D600 | LF1800-C | 600V/60A | 1800 | W426*H176*D600 |
| LF1800-A | 150V/360A | 1800 | W426*H176*D600 | LF2100-B | 300V/140A | 2100 | W426*H176*D600 | LF2100-C | 600V/70A | 2100 | W426*H176*D600 |
| LF2100-A | 150V/420A | 2100 | W426*H176*D600 | LF2500-B | 300V/160A | 2500 | | LF2500-C | 600V/80A | 2500 | |
| LF2500-A | 150V/480A | 2500 | | LF3000-B | 300V/200A | 3K | | LF3000-C | 600V/100A | 3K | |
| LF3000-A | 150V/500A | 3K | | LF5000-B | 300V/250A | 5K | Rack mount type (Custom order) | LF5000-C | 600V/140A | 5K | Rack mount type (Custom order) |
| LF5000-A | 150V/800A | 5K | Rack mount type (Custom order) | LF10000-B | 300V/300A | 10K | | LF10000-C | 600V/200A | 10K | |
| LF10000-A | 150V/1000A | 10K | | LF15000-B | 300V/500A | 15K | | LF15000-C | 600V/300A | 15K | |
| LF15000-A | 150V/1500A | 15K | | LF20000-B | 300V/750A | 20K | | LF20000-C | 600V/500A | 20K | |
| LF20000-A | 150V/1500A | 20K | | | | | | | | | |

For out of line-up, custom order is available

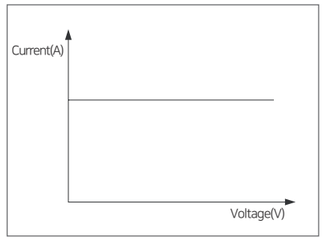



### ON/OFF Mode (ON/OFF Test under CC Mode)

Conduct ON/OFF test under constant current regardless of input voltage from DC Power Supply.

- Operating range : 0~60A
- Resolution : 1mA
- On/Off Time : 100mS~250H 59M 59S 990mS(10mS Unit)
- Repeat : 1~65500

Application Vehicle Harness, Many kinds of current ON/OFF test ※ User can conduct cycling test easily.

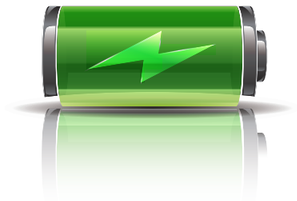



### FUSE Mode (Fuse Test under CC Mode)

Conduct fuse test under constant current regardless of input voltage from DC Power Supply.

- Operating range : 0~60A
- Resolution : 1mA
- Fuse Time : 100mS~250H 59M 59S 990mS(10mS Unit)
- Fuse time setting and display Fuse open time(10ms unit)

Application Vehicle fuse, Many kinds of fuse test



### Battery Mode (Battery Test)

Conduct discharging test by calculating input voltage and capacity of battery.

- Mode : CC, CR, CP
- Operating Range/ Resolution : same with CC(Hi Range), CR, CP above
- End Volt : 1~150V(10mV unit)
- End Cap : 0.1~6550AH(100mAH unit)

Application Battery cell, Battery pack, Battery discharging test

# LP Series

## Programmable DC Electronic Load
## High Performance, High Precision

LP Series is ODA Technologies'high resolving, and high response DC Electronic Load which involves variety functions to develop investment and provide confidence in reliability test. Especially, it is adequate in demanding high-speed voltage variation test.

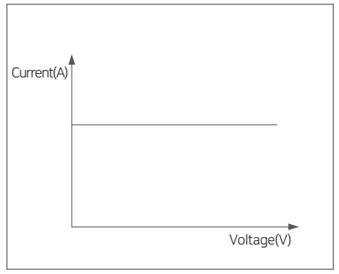
## Standard Features

- CV, CC, CR Mode
- V-Sensing
- Dynamic Mode
- Cycling Mode
- Slew rate Mode
- Analog Signal Input, Analog Signal Output Control
- RS-232C, RS-485, USB Standard(TCP-IP Optional)


1. Power Switch
2. Ventilation slit
3. 20Char *2Line LCD Display
4. CC Mode Lamp
5. CR Mode Lamp
6. CV Mode Lamp
7. Dynamic Mode Lamp
8. Cycling Mode Lamp
9. Remote Interface Lamp
10. Protection Lamp
11. Error Lamp
12. Setting Encoder
13. Left Cursor or Menu Change
14. Right Cursor or Menu Change
15. Input Voltage/Current ON/OFF
16. Mode Setting
17. Range Setting
18. Slew
19. IO/Local
20. Short ON/OFF
21. Recall, Save Key
22. ESC&Err Check, Protection Cancel
23. B-Memory, Factory
24. A-Memory, Calibration
25. Dynamic Cycling Time, Dynamic Duty
26. Dynamic ON/OFF
27. Cycling Sequence
28. Cycling Repeat
29. Cycling Step
30. Cycling ON/OFF

## Line-Up and Specification

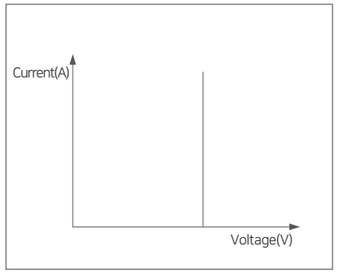
| Dimension \ Max. Input Voltage | Max.60V DC Input | Max.250V DC Input | Max.500V DC Input |
|---|---|---|---|
| W : 213mm<br>H : 132mm<br>D : 540mm | **LP300-A**<br>(0-60V, 0-60A, 300W)<br>**LP600-A**<br>(0-60V, 0-120A, 600W) | **LP250-B**<br>(0-250V, 0-10A, 250W)<br>**LP500-B**<br>(0-250V, 0-20A, 500W) | **LP200-C**<br>(0-500V, 0-5A, 200W)<br>**LP400-C**<br>(0-500V, 0-10A, 400W) |
| W : 426mm<br>H : 132mm<br>D : 565mm | **LP900-A**<br>(0-60V, 0-180A, 900W)<br>**LP1200-A**<br>(0-60V, 0-240A, 1200W) | **LP750-B**<br>(0-250V, 0-30A, 750W)<br>**LP1000-B**<br>(0-250V, 0-40A, 1000W) | **LP600-C**<br>(0-500V, 0-15A, 600W)<br>**LP800-C**<br>(0-500V, 0-20A, 800W) |
| W : 426mm<br>H : 176mm<br>D : 565mm | **LP1500-A**<br>(0-60V, 0-300A, 1500W)<br>**LP2000-A**<br>(0-60V, 0-400A, 2000W) | **LP1200-B**<br>(0-250V, 0-50A, 1200W)<br>**LP1500-B**<br>(0-250V, 0-60A, 1500W) | **LP1000-C**<br>(0-500V, 0-25A, 1000W)<br>**LP1300-C**<br>(0-500V, 0-30A, 1300W) |




Regardless of the input voltage, it always maintains its constant load current.

**Application**

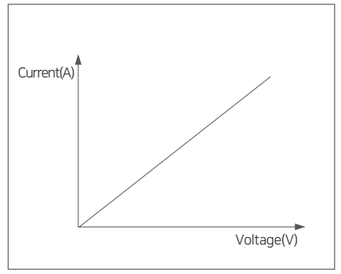
- Power Supply load regulation test.
  Battery, SMPS DC Power, Adaptor and etc.
- Current capacity test.
- Power discharging test.
- Battery, Capacitor, Charging Devices.




Regardless of the input voltage, it always maintains its constant voltage.

**Application**

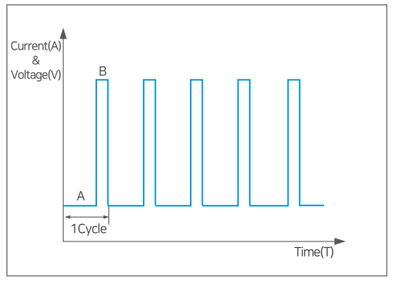
- Power test.
- Adaptor, Various DC Power, etc.
- Power supply CC Circuit test.




Taking the load current to resist input voltage of power supply.

**Application**

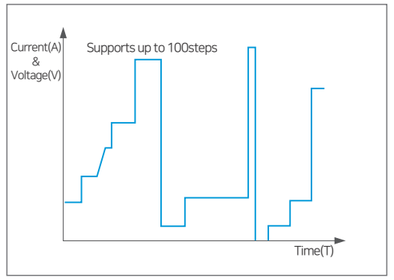
- Analysis Power supply characteristic
- Delay starting up Power supply
- Power resistor simulation




Dynamic Mode allows voltage & current to change in high-speed.
Users are able to set 0.1ms~4s 1Cycle Time and 6~0.1ms~4s 1Cycle Time and 6~94% Cycle Duty to make pulse that user wants.

**Application**

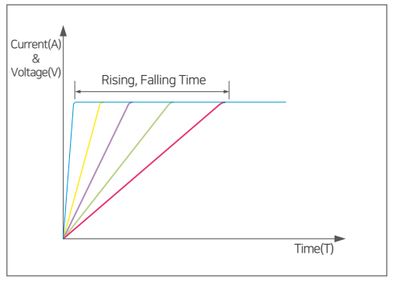
- Inrush load experiment Inrush of high-speed encounter to cope with the cold load power inrush test.
- Instantaneous current capacity testing
  The instantaneous current capacity testing
- Instant inrush load by charging device lifetime experiment
  Battery, Capacitor and etc. lifetime deduction test.




Cycling Mode Make things possible to implement sequencing various waveform.
Total 100 step of setting and 50ms~86400s(24Hours) Setting, On/Off mode makes various waveform that users want.

**Application**

- On/Off experiment
  Various front, harness, terminal, etc durability and safety test.
- Experiment of changed power characteristic by voltage, current change.
  DC Power, Adaptor, Battery and etc, changed by current & voltage power test.
- Charging device, charging & discharging experiment
  Battery, Capacitor, etc charging & discharging test.




Slew Rate function allows to control rising and falling speed of voltage and current.
It helps users to implement rising and falling speed of voltage & current(current low:10, hi:10 level voltage 9 levels)

**Application**

- Experiment which requires fast rising & falling speed
  Inrush test of the power, circuit breaker capacity test.
- Experiment which requires slow rising & falling speed.
  DC Power, Adaptor, Battery and etc lifetime & characteristic test.

# LP Series

| | LP300-A | LP600-A | LP900-A |
|---|---|---|---|
| Operating range(@0℃~40℃) | 3~60V, 0~60A, 300W | 3~60V, 0~120A, 600W | 3~60V, 0~180A, 900W |
| CC Mode | | | |
| Range | High_0~60A<br>Low_0~6A | High_0~120A<br>Low_0~12A | High_0~180A<br>Low_0~18A |
| Resolution | L : 10mA, H : 100mA | L : 10mA, H : 1A | L : 10mA, H : 1A |
| Accuracy | ± 0.1% ± 75mA | ± 0.1% ± 120mA | ± 0.1% ± 180mA |
| CV Mode | | | |
| Range | 3~60V | 3~60V | 3~60V |
| Resolution | 100mV | 100mV | 100mV |
| Accuracy | ± 0.1% ± 50mV | ± 0.1% ± 50mV | ± 0.1% ± 50mV |
| CR Mode | | | |
| Range | High_10~6,000Ω<br>Mid_1~600Ω<br>Low_0.33~1Ω | High_5~600Ω<br>Mid_0.5~60Ω<br>Low_0.17~0.5Ω | High_5~600Ω<br>Mid_0.3~60Ω<br>Low_0.11~0.3Ω |
| Accuracy | High&Mid_0.3%±100mΩ<br>Low_0.8%±8mΩ | High&Mid_0.3%±100mΩ<br>Low_0.8%±8mΩ | High&Mid_0.3%±100mΩ<br>Low_0.8%±8mΩ |
| Ripple & Noise | 4mA(rms) / 40mA(p-p)<br>6mV(rms) | 8mA(rms) / 80mA(p-p)<br>6mV(rms) | 12mA(rms) / 120mA(p-p)<br>6mV(rms) |
| Dimension | 213mm(W) x 133mm(H) x 530mm(D) | 213mm(W) x 133mm(H) x 530mm(D) | 426mm(W) x 133mm(H) x 560mm(D) |

| | LP1200-A | LP1500-A | LP2000-A |
|---|---|---|---|
| Operating range(@0℃~40℃) | 3~60V, 0~240A, 1200W | 3~60V, 0~300A, 1500W | 3~60V, 0~400A, 2000W |
| CC Mode | | | |
| Range | High_0~240A<br>Low_0~24A | High_0~300A<br>Low_0~30A | High_0~400A<br>Low_0~40A |
| Resolution | L : 100mA, H : 1A | L : 100mA, H : 1A | L : 100mA, H : 1A |
| Accuracy | ± 0.1% ± 240mA | ± 0.1% ± 300mA | ± 0.1% ± 400mA |
| CV Mode | | | |
| Range | 3~60V | 3~60V | 3~60V |
| Resolution | 100mV | 100mV | 100mV |
| Accuracy | ± 0.1% ± 50mV | ± 0.1% ± 50mV | ± 0.1% ± 50mV |
| CR Mode | | | |
| Range | High_2.5~600Ω<br>Mid_0.25~60Ω<br>Low_0.1~0.25Ω | High_2~600Ω<br>Mid_0.2~60Ω<br>Low_0.07~0.2Ω | High_1.5~600Ω<br>Mid_0.15~60Ω<br>Low_0.06~0.15Ω |
| Accuracy | High&Mid_0.3%±100mΩ<br>Low_0.8%±8mΩ | High&Mid_0.3%±100mΩ<br>Low_0.8%±8mΩ | High&Mid_0.3%±100mΩ<br>Low_0.8%±8mΩ |
| Ripple & Noise | 18mA(rms) / 180mA(p-p)<br>6mV(rms) | 24mA(rms) / 240mA(p-p)<br>6mV(rms) | 30mA(rms) / 300mA(p-p)<br>6mV(rms) |
| Dimension | 426mm(W) x 133mm(H) x 560mm(D) | 426mm(W) x 176mm(H) x 630mm(D) | 426mm(W) x 176mm(H) x 630mm(D) |

| | LP250-B | LP500-B | LP750-B |
|---|---|---|---|
| Operating range(@0℃~40℃) | 3~250V, 0~10A, 250W | 3~250V, 0~20A, 500W | 3~250V, 0~30A, 750W |
| CC Mode | | | |
| Range | High_0~10A<br>Low_0~1A | High_0~20A<br>Low_0~2A | High_0~30A<br>Low_0~3A |
| Resolution | L : 10mA, H : 100mA | L : 10mA, H : 100mA | L : 10mA, H : 100mA |
| Accuracy | ± 0.15% ± 10mA | ± 0.15% ± 20mA | ± 0.15% ± 30mA |
| CV Mode | | | |
| Range | 3~250V | 3~250V | 3~250V |
| Resolution | 1V | 1V | 1V |
| Accuracy | ± 0.12% ± 500mV | ± 0.12% ± 500mV | ± 0.12% ± 500mV |
| CR Mode | | | |
| Range | High_240~20,000Ω<br>Mid_24~2,000Ω<br>Low_0.2~24Ω | High_120~20,000Ω<br>Mid_12~2,000Ω<br>Low_0.1~12Ω | High_80~20,000Ω<br>Mid_8~2,000Ω<br>Low_0.07~8Ω |
| Accuracy | High&Mid_0.3%±1mΩ<br>Low_0.8%±200mΩ | High&Mid_0.3%±1mΩ<br>Low_0.8%±200mΩ | High&Mid_0.3%±1mΩ<br>Low_0.8%±200mΩ |
| Ripple & Noise | 1mA(rms) / 10mA(p-p)<br>6mV(rms) | 2mA(rms) / 20mA(p-p)<br>6mV(rms) | 3mA(rms) / 30mA(p-p)<br>6mV(rms) |
| Dimension | 213mm(W) x 133mm(H) x 530mm(D) | 213mm(W) x 133mm(H) x 530mm(D) | 426mm(W) x 133mm(H) x 560mm(D) |
| Cycling Mode | Max 100stap / 50ms~86,400s Delay Time / CC, CV Mode support | | |
| Dynamic Mode | A,B 2ch Memory / 0.1ms~4s Cycle Time / 6~94% Cycle Duty / CC, CV Mode support | | |
| Slew Rate | CC MODE-Low : 10step, HI : 10step / Mode : 9step | | |
| Protection | OVP, OPP, OTP(Heatsink Temp105℃) | | |
| Analog IN/OUT PUT | Voltage, current Analog output(0~10V) / Remote Sensing(5Vdc between sense and Load input) | | |
| Remote Interface | RS-232 & 485 & USB | | |

| | LP1000-B | LP1200-B | LP1500-B |
|---|---|---|---|
| Operating range(@0℃~40℃) | 3~250V, 0~40A, 1000W | 3~250V, 0~45A, 1200W | 3~250V, 0~60A, 1500W |
| CC Mode | | | |
| Range | High_0~40A<br>Low_0~4A | High_0~48A<br>Low_0~4.8A | High_0~64A<br>Low_0~6.4A |
| Resolution | L : 10mA, H : 100mA | L : 10mA, H : 1A | L : 10mA, H : 1A |
| Accuracy | ± 0.15% ± 40mA | ± 0.15% ± 48mA | ± 0.15% ± 64mA |
| CV Mode | | | |
| Range | 3~250V | 3~250V | 3~250V |
| Resolution | 1V | 1V | 1V |
| Accuracy | ± 0.12% ± 500mV | ± 0.12% ± 500mV | ± 0.12% ± 500mV |
| CR Mode | | | |
| Range | High_60~20,000Ω<br>Mid_6~2,000Ω<br>Low_0.05~6Ω | High_50~20,000Ω<br>Mid_5~2,000Ω<br>Low_0.042~5Ω | High_38~20,000Ω<br>Mid_3.8~2,000Ω<br>Low_0.03~3.8Ω |
| Accuracy | High&Mid_0.3%±1mΩ<br>Low_0.8%±200mΩ | High&Mid_0.3%±1mΩ<br>Low_0.8%±200mΩ | High&Mid_0.3%±1mΩ<br>Low_0.8%±200mΩ |
| Ripple & Noise | 4mA(rms) / 40mA(p-p)<br>6mV(rms) | 4.8mA(rms) / 48mA(p-p)<br>6mV(rms) | 6.4mA(rms) / 64mA(p-p)<br>6mV(rms) |
| Dimension | 426mm(W) x 133mm(H) x 560mm(D) | 426mm(W) x 176mm(H) x 630mm(D) | 426mm(W) x 176mm(H) x 630mm(D) |

| | LP200-C | LP400-C | LP600-C |
|---|---|---|---|
| Operating range(@0℃~40℃) | 3~500V, 0~5A, 200W | 3~500V, 0~10A, 400W | 3~500V, 0~15A, 600W |
| CC Mode | | | |
| Range | High_0~5A<br>Low_0~0.5A | High_0~10A<br>Low_0~1A | High_0~15A<br>Low_0~1.5A |
| Resolution | L : 1mA, H : 10mA | L : 10mA, H : 100mA | L : 10mA, H : 100mA |
| Accuracy | ± 0.15% ± 5mA | ± 0.15% ± 10mA | ± 0.15% ± 15mA |
| CV Mode | | | |
| Range | 3~500V | 3~500V | 3~500V |
| Resolution | 1V | 1V | 1V |
| Accuracy | ± 0.15% ± 500mV | ± 0.15% ± 500mV | ± 0.15% ± 500mV |
| CR Mode | | | |
| Range | High_1,000~100,000Ω<br>Mid_100~10,000Ω<br>Low_0.4~100Ω | High_500~50,000Ω<br>Mid_50~5,000Ω<br>Low_0.2~50Ω | High_333~50,000Ω<br>Mid_33~5,000Ω<br>Low_0.14~33Ω |
| Accuracy | High&Mid_0.3%±5Ω<br>Low_0.8%±500mΩ | High&Mid_0.3%±1Ω<br>Low_0.8%±200mΩ | High&Mid_0.3%±1Ω<br>Low_0.8%±200mΩ |
| Ripple & Noise | 0.5mA(rms) / 5mA(p-p)<br>10mV(rms) | 1mA(rms) / 10mA(p-p)<br>10mV(rms) | 1.5mA(rms) / 15mA(p-p)<br>10mV(rms) |
| Dimension | 213mm(W) x 133mm(H) x 530mm(D) | 213mm(W) x 133mm(H) x 530mm(D) | 426mm(W) x 133mm(H) x 560mm(D) |

| | LP800-C | LP1000-C | LP1300-C |
|---|---|---|---|
| Operating range(@0℃~40℃) | 3~500V, 0~20A, 800W | 3~500V, 0~25A, 800W | 3~500V, 0~30A, 1300W |
| CC Mode | | | |
| Range | High_0~20A<br>Low_0~2A | High_0~25A<br>Low_0~2.5A | High_0~30A<br>Low_0~6.4A |
| Resolution | L : 10mA, H : 100mA | L : 10mA, H : 100mA | L : 10mA, H : 100mA |
| Accuracy | ± 0.15% ± 20mA | ± 0.15% ± 25mA | ± 0.15% ± 64mA |
| CV Mode | | | |
| Range | 3~500V | 3~500V | 3~500V |
| Resolution | 1V | 1V | 1V |
| Accuracy | ± 0.15% ± 500mV | ± 0.15% ± 500mV | ± 0.15% ± 500mV |
| CR Mode | | | |
| Range | High_250~50,000Ω<br>Mid_25~5,000Ω<br>Low_0.1~25Ω | High_200~50,000Ω<br>Mid_20~5,000Ω<br>Low_0.08~20Ω | High_167~50,000Ω<br>Mid_16.7~5,000Ω<br>Low_0.067~16.7Ω |
| Accuracy | High&Mid_0.3%±1Ω<br>Low_0.8%±200mΩ | High&Mid_0.3%±1Ω<br>Low_0.8%±200mΩ | High&Mid_0.3%±1Ω<br>Low_0.8%±200mΩ |
| Ripple & Noise | 1mA(rms) / 10mA(p-p)<br>6mV(rms) | 2mA(rms) / 20mA(p-p)<br>6mV(rms) | 3mA(rms) / 30mA(p-p)<br>6mV(rms) |
| Dimension | 426mm(W) x 133mm(H) x 560mm(D) | 427mm(W) x 176mm(H) x 630mm(D) | 426mm(W) x 176mm(H) x 630mm(D) |
| Cycling Mode | Max 100stap / 50ms~86,400s Delay Time / CC, CV Mode support | | |
| Dynamic Mode | A,B 2ch Memory / 0.1ms~4s Cycle Time / 6~94% Cycle Duty / CC, CV Mode support | | |
| Slew Rate | CC MODE-Low : 10step, HI : 10step / Mode : 9step | | |
| Protection | OVP, OPP, OTP(Heatsink Temp105℃) | | |
| Analog IN/OUT PUT | Voltage, current Analog output(0~10V) / Remote Sensing(5Vdc between sense and Load input) | | |
| Remote Interface | RS-232 & 485 & USB | | |

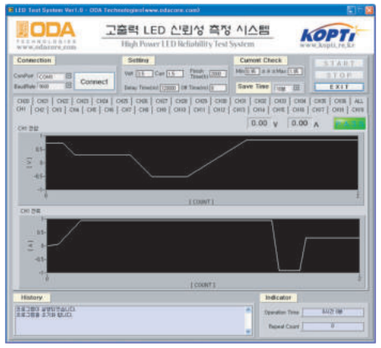
# Test & Automation Solution

## Do you need System Power Supply - Aging, Test & Reliability System DAS(Data Acquire System)?

ODA test system is used in various research fields and reliability, durability, life-time and burn-in tests in the manufacturing field for synchronizing oscilloscope, multimeter, FS, electronic load and etc. It is also reasonably priced so you may use this system freely.

POWER SUPPLY + MULTIMETER + OSCILLOSCOPE + ELECTRONIC LOAD +

FUNCTION GENERATOR + OTHER MEASURING INSTRUMENT




We provide not only hardware, but also software that customer needs. Just state your purpose and specifics of your desired system to our office, and we will provide an appropriate solution to successfully complete your project.

### High Power LED Reliability Test System

- Channel : 144CH
- Control Solution : NI Labview
- LED 12Package JIG and Chamber
- LED If, Vf, Vr, R Data Processing

### LED, LD PD Reliability Test System

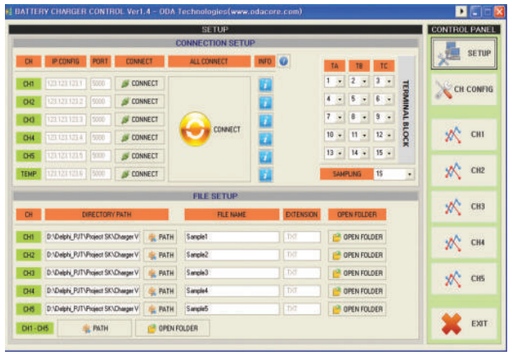
- Channel : 36CH
- Control Solution : NI Labview
- LED, LD, PD each 12Package JIG and Chamber
- LED If, Vf, Vr, R Data Processing

### DC-DC Convertor Reliability Test System

- Channel : 25CH
- Control Solution : Agilent VEE
- DC-DC Convertor ALL Enclosed Products
- 25 Channel Slide Type 2 Layer JIG
- 25 Slot Fail/Pass & Data Acquisition Solution

# Test & Automation Solution

## Application & System





### Reliability, Durability Test System

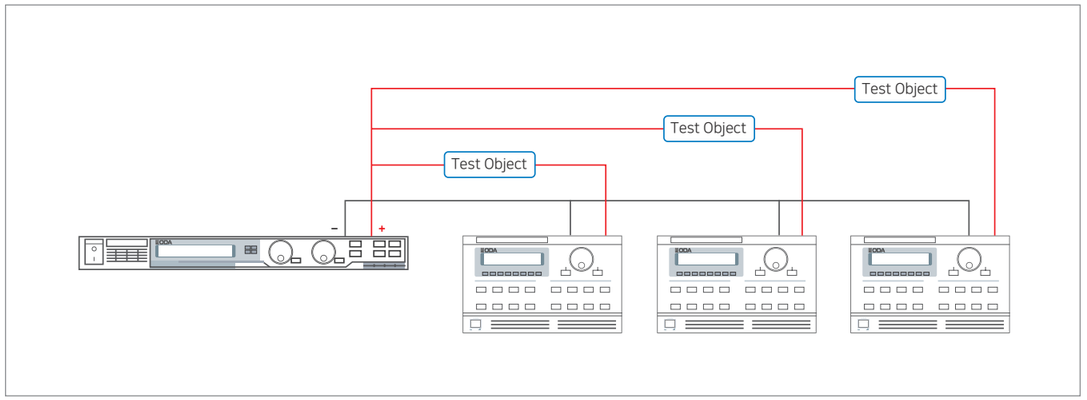
- Channel : 2CH
- Control Solution : NI Labview
- Electric Car Battery Test

### Life-Time Test System

- Channel : 26CH
- Control Solution : NI Labview
- LED Life-Time Test


We form Programmable DC Power Supply, Programmable Electronic Load in a system to use in durability test.
Our LP Series have not only CV, CC, CR mode, but also provide Cycling Test Mode, Dynamic Mode and Slew rate mode which enable users to conduct various power load test & terminal, terminal wires and capacity test, battery charging/discharging test etc.

### An example of system using Programmable DC Power Supply and Programmable Electronic Load

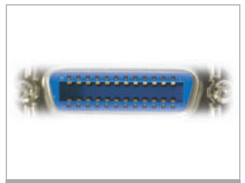


# Accessories & Option


AC Power Cord

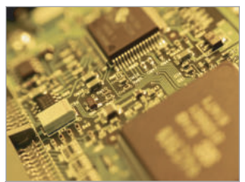

Output Cable


RS-485 Module


GPIB Module


RS-232C Cable

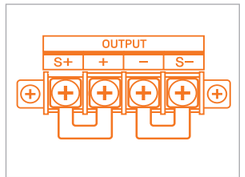

GPIB Cable


Converter for RS-485 to RS-232C

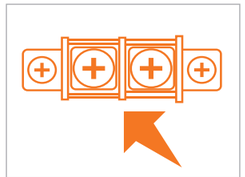

USB Connecter for RS-232C

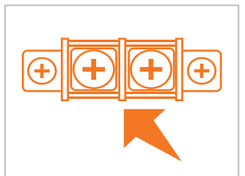

Rack Mount Bracket

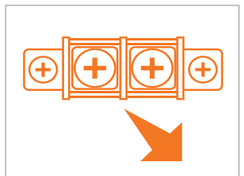

Rack Mount Shelf

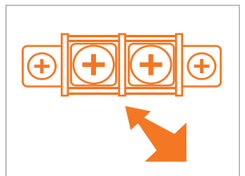


Rear Output


Output ON/OFF Signal Control


Analog Signal Input


Analog Signal Output


V-Sensing

OVP/OCP

Input Power

Window Application


Caster

Warranty Extend

# ODA TECHNOLOGIES INSTRUMENTS

## DC Power Supply 5 digit

**OP □ - 3010 □**

- In case of OPM Series, mark as D, T, Q(Dual, Triple, Quarter(4CH)
- Output Current
- Output Voltage
- S : Single Variable Output
- M : Modular Type, Solution Included
- X : Special Order Type, Solution Included
- Programmable DC Power Supply (RS-232C/GPIB)
- ODA TECHNOLOGIES

## DC Power Supply 3 digit

**O □ □ - 3010 □ □**

- Blank : COMMON TYPE
- I : ISOLATED TYPE
- S : Single Variable Output
- D : Dual Variable Output
- T : Triple Variable Output, Fixed 1 Channel
- Q : Dual Variable Output, Fixed 2 Channel
- Output Current
- Output Voltage
- E : Economical Type
- S : Regulated Series, Single Output
- T : Regulated Series, Triple Output
- P : Programmable DC Power Supply (RS-232C/RS-485)
- R : Regulated DC Power Supply
- ODA TECHNOLOGIES

## Switching Type DC Power Supply

**EX(PT)80 - 22.5**

- Output Current
- Output Voltage
- Switching Type Programmable DC Power Supply

## DC Electronic Load

**LP 300 - A**

- A : 60V
- B : 250V
- C : 500V
- Input Wattage
- Programmable DC Electronic Load
- Professional Type

**LF 300 - A**

- A : 150V
- B : 300V
- C : 600V
- Input Wattage
- Programmable DC Electronic Load
- Standard Type