

Orient Award



ISO 14001:2004



ISO 9001:2000

INNOBIZ

The certificates of  
INNO-BIZ (SMBA)



The certificates of  
promising medium  
and small enterprise  
(SMBA)

**ORIENT**  
ELECTRONICS

# ORIENT ELECTRONICS



# About Us

---

Orient Electronics established in 1979 is a professional manufacturer of high reliability and efficiency power supply devices for communication and industry with its policies of best quality and best services.

Orient Electronics obtained ISO9001 for the first time in the same business section as well as other safety standards and quality certificates such as UL, CE.

Orient Electronics developed the high reliability Switching Mode Power Supply device (S.M.P.S.) and electric parts (DC/DC converter, Noise Filter, Solid State Relay) to satisfy the customer's demands, approximately 600 of standard power supply devices and customized power supply devices.

- **Company established** in 1979
- **About 40 years** experience in S.M.P.S.
- **No.1 S.M.P.S. company** in Domestic market
- **Manufacturing locations** in Seongnam, Korea
- **Capacity:** 3,500 m<sup>2</sup> factory scale & 50,000 units per month mass production

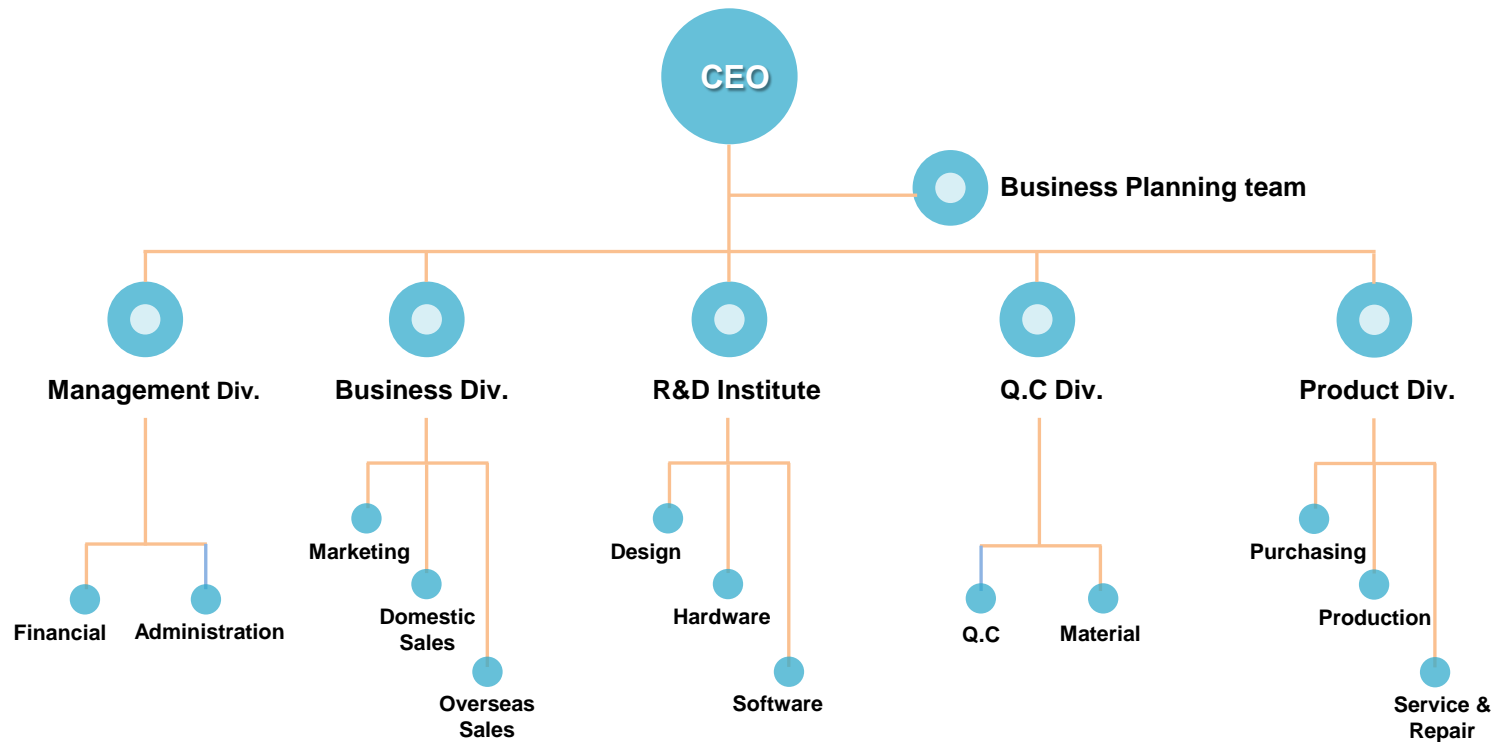
# Overview

---

- **Company name:** ORIENT ELECTRONICS INC
- **Address:** #322, Galmachi-ro, Jungwon-gu, Sunghnam-si, Gyeonggi-do, Korea
- **Website:** <http://www.orientelec.co.kr>
- **Contact point:** Peter Won Seo, Lee (smpls2@orientelec.co.kr / +82-31-737-0212)
- **Number of Employee:** 150
- **CEO:** Chang, Jae-Jin
- **Capital:** \$3,000,000



# Organization structure



# Companies Using Orient S.M.P.S.


**TOSHIBA**

SAMSUNG TECHWIN

VISSEM

HYUNDAI  
**WIA**

 **HYUNDAI**  
ELEVATOR CO., LTD.

Mirae 

 **ThyssenKrupp**

 Chungho ComNet

 **MITSUBISHI**  
ELEVATOR KOREA

 Hanwha  
TechM

 **SAMIK**

 **ADT**  
WORLD No.1

ADT캡스

 SeeTech  
SEETECH CO., LTD.

**ROVEN**

**OTIS**

 DAEHAN ULTRAVISION

 에스원

 PULOON  
TECH

 **SAMSUNG**

**SAMSUNG NETWORKS**

 **NEW POWER**  
PLASMA

 **LS** Industrial System

 **HYUNDAI**  
HEAVY INDUSTRIES CO.,LTD.

 **MEDIANA**

HYUNDAI  
**MOBIS**

 Dongbu Robot

**SunStar**

**CAS**

 **LISTEM**

 **DOOSAN**  
Infracore

 **SK** telecom

 **NEXEN**  
TIRE CORPORATION

 **LG Display**

 **Lotvacuum**

 **CGV**  
**LOTTE**  
ALUMINIUM

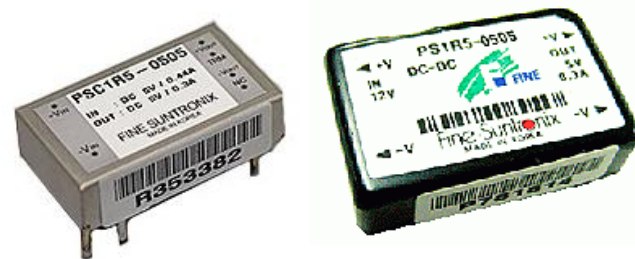
 **5678**  
SMRT  
Seoul Metropolitan  
Rapid Transit Corporation

# Standard Products

## S.M.P.S.



## DC/DC Converter



## Noise Filter





## S.S.R. / ETC.



# Standard Products (S.M.P.S.)

## FDR Series



- **DIN Rail Product (Installation on DIN Rail 35mm Only)**
- Low cost and compact size
- Universal AC Input
- Line up: 15W, 30W, 50W, 70W, 120W, 180W, 240W, 480W
- Output: 05V, 12V, 24V, 48V
- Built-in Active PFC Function: PF>0.93 ( 180W, 240W Only )
- Protections : Short Circuit / Over Voltage / Over Current / Over Temperature
- LED Indicator : POWER ON , DC LOW
- Safety :   CB
- 3 year warranty

### Applied Field



LCD Production facilities



Elevator control panel



CNC Equipment



Control board for Industrial robot

# Standard Products (S.M.P.S.)

## FDR Series Specification

Model		FDR15	FDR30	FDR50	FDR70	
INPUT	Voltage, Frequency	AC100-240V (AC90 ~ 264V or DC127 ~ 370V), 50/60Hz (47 ~ 63Hz) Universal Input				
	Current	110V	0.45A (Io=100%)	0.9A (Io=100%)	1.0A (Io=100%)	1.5A (Io=100%)
		220V	0.3A (Io=100%)	0.6A (Io=100%)	0.6A (Io=100%)	1.0A (Io=100%)
Inrush Current		20A typ. (AC IN 110V, Io=100%), 40A typ. (AC IN 220V, Io=100%) at cold start.				
OUTPUT	Turn on time (Typ)	200mS (AC IN 110V, Io=100%)	200mS (AC IN 110V, Io=100%)	560mS (AC IN 110V, Io=100%)	560mS (AC IN 110V, Io=100%)	
	Turn off time (Typ)	20mS (AC IN 110V, Io=100%)	20mS (AC IN 110V, Io=100%)	20mS (AC IN 110V, Io=100%)	20mS (AC IN 110V, Io=100%)	
PROTECTION	Over Current Protection	Works at over 110% of rating and recovers automatically				
	Over Voltage Protection	Works at 115 ~ 145% of rating				
ELECTRICALLY ISOLATED	INPUT-OUTPUT	AC 3,000V (1 minute/ 20mA), DC 500V, 100MΩ (At room temperature & Humidity)				
	INPUT-CASE, FG	AC 2,000V (1 minute/ 20mA), DC 500V, 100MΩ (At room temperature & Humidity)				
	OUTPUT-CASE, FG	AC 500V (1 minute/ 100mA), DC 500V, 100MΩ (At room temperature & Humidity)				
ENVIRONMENT	OPERATING TEMP AND HUMID	-25 ~ +70°C (Required Derating), 20 ~ 90% RH (Non Condensing)				
	STORAGE TEMP AND HUMID	-40 ~ +85°C, 20 ~ 90% RH (Non Condensing)				
	VIBRATION	10 ~ 55Hz at 1G, 3 minutes period, 30 minutes along X, Y and Z axis				
SAFETY	SAFETY REGULATION	UL, C-UL, CE, CB				
	LINE CONDUCTED RF VOLTAGE	Complied with FCC Part 15 Class B, VCCI-B, CISPR22-B, EN55022-B				
Size		95 x 22.5 x 108 mm	95 x 36 x 108 mm	130 x 30 x 125 mm	130 x 33 x 125 mm	
Weight (typ)						



# Standard Products (S.M.P.S.)

## FDR Series Specification

Model		FDR120	FDR180	FDR240	FDR480	
INPUT	Voltage, Frequency	AC100-240V (AC90 ~ 264V or DC127 ~ 370V), 50/60Hz (47 ~ 440Hz) Universal Input				
	Current *note1)	110V	2.4A (Io=100%)	2.0A (Io=100%)	2.5A (Io=100%)	5.0A (Io=100%)
		220V	1.4A (Io=100%)	1.0A (Io=100%)	1.25A (Io=100%)	2.5A (Io=100%)
	Inrush Current	20A typ./40A typ.	50A typ./50A typ.	50A typ./50A typ.	40A typ./80A typ.	
OUTPUT	Turn on time (Typ)	560mS (AC IN 110V, Io=100%)	3600mS (AC IN 110V, Io=100%)	3600mS (AC IN 110V, Io=100%)	3000mS (AC IN 110V, Io=100%)	
	Turn off time (Typ)	20mS (AC IN 110V, Io=100%)	20mS (AC IN 110V, Io=100%)	20mS (AC IN 110V, Io=100%)	14mS (AC IN 220V, Io=100%)	
PROTECTION	Over Current Protection	Works at over 110% of rating and recovers automatically				
	Over Voltage Protection	Works at 115 ~ 145% of rating				
ELECTRICALLY ISOLATED	INPUT-OUTPUT	AC 3,000V (1 minute/ 20mA), DC 500V, 100MΩ (At room temperature & Humidity)				
	INPUT-CASE, FG	AC 2,000V (1 minute/ 20mA), DC 500V, 100MΩ (At room temperature & Humidity)				
	OUTPUT-CASE, FG	AC 500V (1 minute/ 100mA), DC 500V, 100MΩ (At room temperature & Humidity)				
ENVIRONMENT	OPERATING TEMP AND HUMID	-25 ~ +70°C (Required Derating), 20 ~ 90% RH (Non Condensing)				
	STORAGE TEMP AND HUMID	-40 ~ +85°C, 20 ~ 90% RH (Non Condensing)				
	VIBRATION	10 ~ 55Hz at 1G, 3 minutes period, 30 minutes along X, Y and Z axis				
SAFETY	SAFETY REGULATION	UL, C-UL, CE, CB				
	LINE CONDUCTED RF VOLTAGE	Complied with FCC Part 15 Class B, VCCI-B, CISPR22-B, EN55022-B				
Size		130 x 40 x 125 mm	130 x 50 x 125 mm	130 x 60 x 125 mm	130 x 87 x 125 mm	
Weight (typ)						

# Standard Products (S.M.P.S.)

## JSF Series



- Very low cost
- Universal input voltage of user selectable voltage
- Over voltage / over current protection
- Line up: 15W, 35W, 50W, 75W, 100W, 150W, 200W, 350W
- Output: 3.3V, 5V, 9V, 12V, 15V, 24V, 48V
- 3 year warranty

## CSF Series / NCSF Series



- Small size
- Single, double, triple output
- Cost effective NCSF300 & 600
- Universal input voltage
- Built-in active PFC function, PF>0.95
- Protections : Short circuit / Over voltage / Over current / Over temperature
- Line up:
  - CSF Series:** 15W, 30W, 50W, 75W, 100W, 150W, 300W, 600W, 1500W
  - NCSF Series:** 300W, 600W
- Output: 3.3V, 5V, 9V, 12V, 15V, 24V, 48V
- 4 Year warranty

# Standard Products (S.M.P.S.)

## JSF Series Specification

Model		JSF25	JSF35	JSF50	JSF75	
INPUT	Voltage, Frequency	AC100-240V (AC88 ~ 264V or DC125 ~ 370V), 50/60Hz (47 ~ 440Hz) Universal Input				
	Current *note1)	110V	0.7A (Io=100%)	0.8A (Io=100%)	1.3A (Io=100%)	1.6A (Io=100%)
		220V	0.4A (Io=100%)	0.55A (Io=100%)	0.8A (Io=100%)	1.0A (Io=100%)
	Inrush Current	15A typ. (AC IN 110V, Io=100%) 30A typ. (AC IN 220V, Io=100%) at cold start. 20A typ. (AC IN 110V, Io=100%), 40A typ. (AC IN 220V, Io=100%) at cold start.				
OUTPUT	Turn on time (Typ)	1200mS (AC IN 110V, Io=100%)	1200mS (AC IN 110V, Io=100%)	1200mS (AC IN 110V, Io=100%)	1500mS (AC IN 110V, Io=100%)	
	Turn off time (Typ)	14mS (AC IN 110V, Io=100%)	15mS (AC IN 110V, Io=100%)	14mS (AC IN 110V, Io=100%)	14mS (AC IN 110V, Io=100%)	
PROTECTION	Over Current Protection	Short Protection	Works at over 110% of rating and recovers automatically			
	Over Voltage Protection		Works at 115 ~ 140% of rating			
ELECTRICALLY ISOLATED	INPUT-OUTPUT	AC 3,000V (1 minute/ 20mA), DC 500V, 100MΩ (At room temperature & Humidity)				
	INPUT-CASE, FG	AC 1,500V (1 minute/ 20mA), DC 500V, 100MΩ (At room temperature & Humidity)	AC 2,000V (1 minute/ 20mA), DC 500V, 100MΩ (At room temperature & Humidity)			
	OUTPUT-CASE, FG	AC 500V (1 minute/100mA), DC 500V, 100MΩ (At room temperature & Humidity)				
ENVIRONMENT	OPERATING TEMP AND HUMID	-10 ~ +70°C (Required Derating), 20 ~ 90% RH (Non Condensing)				
	STORAGE TEMP AND HUMID	-40 ~ +85°C, 20 ~ 90% RH (Non Condensing)				
	VIBRATION	10 ~ 55Hz at 1G, 3 minutes period, 30 minutes along X, Y and Z axis				
SAFETY	SAFETY REGULATION	UL, C-UL, CE, CB				
	LINE CONDUCTED RF VOLTAGE	Complied with EN55011/EN55022-B, FCC-B				
SIZE		79 x 51 x 28.5 mm	99 x 82 x 36 mm	99 x 97 x 36 mm	129 x 98 x 38 mm	
WEIGHT (TYP)		200g	330g	350g	410g	

# Standard Products (S.M.P.S.)

## JSF Series Specification

Model		JSF100	JSF150	JSF200	JSF350	
INPUT	Voltage, Frequency	AC100-240V (AC88 ~ 264V or DC125 ~ 370V), 50/60Hz (47 ~ 440Hz) Universal Input	AC100-120V / 200-240V (AC88 ~ 132V / 176 ~ 264V), 50/60Hz (47 ~ 440Hz) or DC248 ~ 370V User-Selectable			
	Current *note1)	110V	2.2A (Io=100%)	3.5A (Io=100%)	4.5A (Io=100%)	7.0A (Io=100%)
		220V	1.2A (Io=100%)	2.0A (Io=100%)	2.5A (Io=100%)	4.0A (Io=100%)
	Inrush Current	20A typ. (AC IN 110V, Io=100%), 40A typ. (AC IN 220V, Io=100%) at cold start.				
OUTPUT	Turn on time (Typ)	2000mS (AC IN 110V, Io=100%)	1500mS (AC IN 110V, Io=100%)	1000mS (AC IN 110V, Io=100%)	1000mS (AC IN 110V, Io=100%)	
	Turn off time (Typ)	14mS (AC IN 110V, Io=100%)	14mS (AC IN 110V, Io=100%)	16mS (AC IN 110V, Io=100%)	16mS (AC IN 110V, Io=100%)	
PROTECTION	Over Current Protection	Works at over 110% of rating and recovers automatically				
	Over Voltage Protection	Works at 115 ~ 140% of rating				
ELECTRICALLY ISOLATED	INPUT-OUTPUT	AC 3,000V (1 minute/ 20mA), DC 500V, 100MΩ (At room temperature & Humidity)				
	INPUT-CASE, FG	AC 2,000V (1 minute/ 20mA), DC 500V, 100MΩ (At room temperature & Humidity)				
	OUTPUT-CASE, FG	AC 500V (1 minute/100mA), DC 500V, 100MΩ (At room temperature & Humidity)				
ENVIRONMENT	OPERATING TEMP AND HUMID	-10 ~ +70°C (Required Derating), 20 ~ 90% RH (Non Condensing)				
	STORAGE TEMP AND HUMID	-40 ~ +85°C, 20 ~ 90% RH (Non Condensing)				
	VIBRATION	10 ~ 55Hz at 1G, 3 minutes period, 30 minutes along X, Y and Z axis				
SAFETY	SAFETY REGULATION	UL, C-UL, CE, CB				
	LINE CONDUCTED RF VOLTAGE	Complied with EN55011/EN55022-B, FCC-B				
SIZE		159 x 97 x 38 mm	199 x 98 x 38 mm	199 x 98 x 50 mm	215 x 115 x 50 mm	
WEIGHT (TYP)		600g	700g	700g	1000g	

# Standard Products (S.M.P.S.)

## Old models

VSF series



- Line up:  
Single: 15W, 30W, 50W, 75W, 100W, 150W, 220W, 300W, 400W  
Dual: 15W, 30W, 50W, 75W, 100W  
Triple: 15W, 30W, 50W, 75W, 100W
- Output: 5V, 9V, 12V, 15V, 24V, 48V

ESF series



- Line up: 100W, 150W, 300W, 600W, 850W, 1000W, 1250W, 1500W
- Output: 3.3V, 5V, 9V, 12V, 15V, 24V, 48V

- Line up: 50W, 75W, 100W, 150W, 600W
- Output: 3.3V, 5V, 9V, 12V, 15V, 24V, 48V



PSF series

- Line up:  
Single: 15W, 25W, 35W, 50W, 60W, 80W, 100W, 150W, 200W, 300W  
Dual: 30W, 50W, 60W, 80W, 100W  
Triple: 30W, 50W, 60W, 80W, 100W
- Output: 3.3V, 5V, 9V, 12V, 15V, 24V, 48V



MSF series

# Standard Products (Noise Filter)



## \* RNS, RMS-S

- **Single Phase, AC250V**
- **5 Model(6A~30A)**
- **Quick and easy push-down terminal block/Cover Type**
- 1-Stage(Single 'L' circuit)
- High attenuation
- Low leakage
- DIN rail mountable: RNS-20\*\*-DIN
- Dimension : 90 x 50 x 35 (W x D x H)
- Suitable for the products that
- Must conform to FCC, FTZ

## \* TNS, TMS-S

- **Three Phase, AC500V**
- **7 Model(6~60A)**
- **Quick and easy push-down terminal block/Cover Type**
- 1-Stage(Single 'L' circuit)
- High attenuation
- Low leakage
- Low-profile design
- DIN rail installation compatible type (Up to 30A)
- Suitable for the products that must conform to FCC, FTZ

# Standard Products (DC/DC Converter, S.S.R.)

## DC/DC Converter



- Small, compact size
- High quality and reliability
- Isolated output
- Over current protection
- 2 year warranty

## S.S.R.



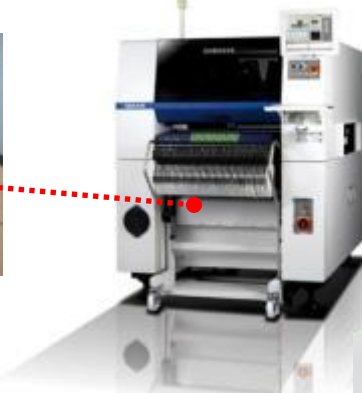
- Compact size, Light
- CR Snubber and zero cross
- Steady Operation in wide temp
- Factory Automation
- Lighting
- 2 year warranty

# ODM Product

## System Power Supply

CP60(Samsung Techwin)

- System power for Chip Mounter



## MPS-PU(Mirea Industry)

- System power for Chip Mounter



## SMPS for Elevator & application product

- Supplying SMPS, Noise Filter, Diode module to 3 Major domestic Elevator companies.
- IPM Driver , Inverter, Using for Control board



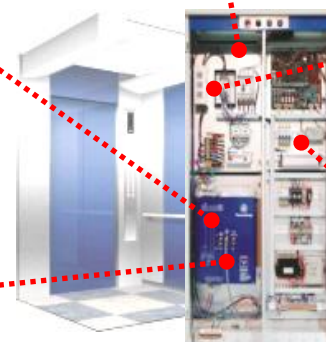
< SMPS for Back-up >



<Semiconductor Module>



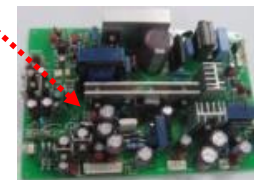
< Noise Filter >



<Elevator Control Panel>



< SMPS for IPM Driver >



< SMPS for Control Board >



---

**Thank you**



**ORIENT ELECTRONICS Inc.**

<http://www.orientelec.co.kr>