DIN RAIL
Power Supplies

HUBBELL

COMMERCIAL CONSTRUCTION

Acme Electric®

Power Supplies

The Other Power in the Cabinet

- DC Output
- Well regulated (<3% for a wide range of voltage fluctuations)
- Small footprint due to high frequency switching design, compared to transformers

- **<u>Lightweight</u>**
  - 100VA transformer = 4lbs

  - 100W power supply= 1lb

- Still provides isolation
- Over-voltage and over-current protection
- Internally fused

What is a DIN Rail Power Supply?

- AC – DC converter
  - Typical Application: 120 VAC to 24VDC from 1 – 20Amps
  - Or 3 Phase: 480VAC to 24 VDC from 5 – 20Amps
- Component in many Automation Cabinets
  - Enclosed design – can be “Finger Safe” or Touch Proof
- High Frequency topology
  - Produces high frequency noise 1%-3% typical
  - High Efficiency: 80 – 95% typical
  - Power Factor issues back onto line: Controlled as a standard in Europe with Power Factor correction passive or active designs to EN61000-3
- Used in almost any control cabinet
- Factory, Building, Service automation applications

Sizing a Power Supply

- Input Voltage: AC or DC, Frequency
  - Most applications are 120 single phase or 480 three phase, 50-60Hz
- Output Voltage
  - 24V most common (>90%)
  - Most units - Adjustment potentiometer
    - To up to 10% plus to handle various loads, and compensate for line drop
- Output Load
  - Size according to maximum amp. load
- Overload Characteristics to ride through high inrush devices
  - Acme: Uses “Constant current” preferred, allows ride through of inrush
  - Some competitor Designs - “Hiccup Mode” – shuts power supply down at first sign of overload
    - Nuisance tripping
    - Unreliable load operation

Target Applications

Where ever you sell Industrial Control Transformers and Hubbell Industrial products!

- Control Cabinets
- Factory Automation
- Building Automation and Control
- Service Automation (automation other than mfg.)
  - Vending Machines
  - Automatic Dispensing - gas station etc.
  - Car wash
  - Computer based that require motion or more extreme environment

Plastic Series

Compact, universal design for light and low power applications

- Low Power
- Plastic case
- 4 Power Ranges:
  - 15, 20, 30, 50 Watts
- Many Voltages Available:
  - 5,
  - 12, 15
  - 24,
  - 48

- Universal Design
  - Wide Range input 90 – 264VAC for Europe, Asia and North America
- Regulations – Safety
  - UL508, also meets EN60950 CE
- Susceptibility and Noise
  - Meets European and US standards
  - EMI A

- Ultra Thin format in shorter height for certain control lines
- Economical Choice for light industrial and commercial use
- Competitors
  - Sola, PULS, Phoenix, Omron, MeanWell, Idec
- Applications
  - Industrial, building, and service automation

Plastic Series

Selection Chart

PLASTIC

Catalog Number	Output Power (Watts Max)	Amp Rating	Voltage Range AC	Output Voltage	Efficiency (1)	Operating Temperature	Height (Inches)(Cm.)	Width (Inches)(Cm.)	Depth (Inches)(Cm.)	Weight (Lbs.)(Kg.)
DMP1504	20 W	4.4 - 3.64	90-264 VAC	5 VDC (4.5-5.5 adj)	75%	-10°C to +50°C	3.54 (90)	0.90 (22.8)	4.02 (102)	0.35 (0.16)
DMP1120125	15 W	1.25 - 1.07	90-264 VAC	12 VDC (10-14 adj)	78%	-10°C to +50°C	3.54 (90)	0.90 (22.8)	4.02 (102)	0.29 (0.13)
DMP112025	30 W	3.0 - 2.14	90-264 VAC	12 VDC (10-14 adj)	84%	-10°C to +50°C	3.54 (90)	0.90 (22.8)	4.02 (102)	0.35 (0.16)
DMP11204	50 W	5.0 - 3.57	90-264 VAC	12 VDC (10-14 adj)	83%	-10°C to +50°C	3.54 (90)	1.26 (32)	4.02 (102)	0.51 (0.23)
DMP11502	30 W	2.14 - 1.67	90-264 VAC	15 VDC (14-18 adj)	84%	-10°C to +50°C	3.54 (90)	0.90 (22.8)	4.02 (102)	0.35 (0.16)
DMP124006	15 W	0.68 - 0.54	90-264 VAC	24 VDC (22-28 adj)	81%	-10°C to +50°C	3.54 (90)	0.90 (22.8)	4.02 (102)	0.29 (0.13)
DMP1240125	30 W	1.36 - 1.07	90-264 VAC	24 VDC (22-28 adj)	85%	-10°C to +50°C	33.54 (90)	0.90 (22.8)	4.02 (102)	0.35 (0.16)
DMP12402	50 W	2.27 - 1.79	90-264 VAC	24 VDC (22-28 adj)	85%	-10°C to +50°C	3.54 (90)	1.26 (32)	4.02 (102)	0.51 (0.23)
DMP14801	50 W	1.09 - 0.96	90-264 VAC	48 VDC (46-52 adj)	85%	-10°C to +50°C	3.54 (90)	1.26 (32)	4.02 (102)	0.51 (0.23)

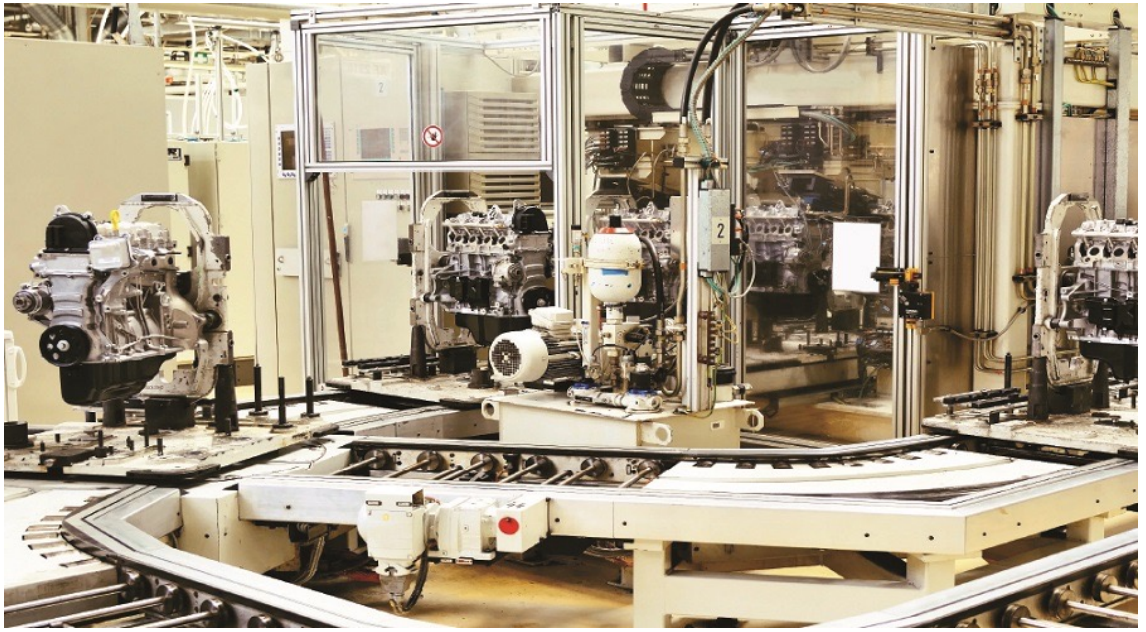
Frequency: 47-63 Hz for all models

1. Depends upon specific model selection, output voltage and/or upon 120 or 240 VAC operation.

Metal DIN Series

Rugged, reliable power for industrial applications

- Industrial, **Specified**
- Broad Power Range
- Universal Design
- Slim format



Metal DIN Series

At a glance

Output 54 – 480 Watts

- Voltages: 12, 24, 36, 48
- Amp ratings
  - Single Phase: 1.25, 2.5, 4.5, 10, 13.3, 20
  - Three Phase: 5, 10, 20

Input – Universal Design

- Single Phase Wide Range 90 – 264VAC
- 3 Phase Wide Range 340- 575VAC

Safety

- Listed and Recognized to cUL508us, CE, EN60950
- PFC and EMI/Noise to CE standards

Metal DIN Series

"Not your average electronic power supply stuffed in a DIN case"

Rugged metal case and design

Industrial Loads

- Handles High Inrush current
- Reduces size of power supply needed

Industrial Specified

- High Grade components
- "Constant Current" OCP (Over Current Protection)

Metal DIN Series

All OCP is not created equal!

Current Limit Protection is a protective load feature in most power supplies, but not all are created equal for industrial loads with high inrush.

- Typically expressed as a percentage of load current that the protection will trip on (ex. 115%)

Constant Current OCP is featured in the DIN Series

- Provides excellent protection
- Smooth operation to load without nuisance tripping and service calls
- **NOT a low cost Hiccup design**
  - Featured in low cost DIN Supplies that actually shut the power supply down and restart it during even temporary overload conditions
  - Low cost, consumer and commercial grade power supplies typically feature this

Metal DIN Series

Where to sell?

Specification line for heavier duty industrial applications

- Automotive and Factory Automation
- Heavy Industrial
- Higher power, higher inrush devices

Competitors

- Sola (SDN line) , PULS, Phoenix, Lambda, Omron, MeanWell, Idec.

DM Series DIN Rail

SINGLE PHASE

Catalog Number	Output Power (Watts Max)	Amp Rating	Voltage Range AC	Voltage Range DC	Output Voltage	Efficiency (1)	Operating Temperature	Height (Inches)(Cm.)	Width (Inches)(Cm.)	Depth (Inches)(Cm.)	Weight (Lbs.)(Kg.)
DM112045	54 W	4.5–3.4	90–254 VAC	—	12 VDC (10–16 adj)	86%	-10°C to +60°C	4.88 (124)	1.97 (50)	4.13 (105)	1.08 (0.49)
DM124025	60 W	2.5–2.1	90–254 VAC	—	24 VDC (22–28 adj)	87%	-10°C to +60°C	4.88 (124)	1.97 (50)	4.13 (105)	1.08 (0.49)
DM12420	480 W	20.0–17.1	90–254 VAC	—	24 VDC (22–28 adj)	90%	-10°C to +60°C	5.12 (130)	6.14 (156)	4.96 (126)	4.96 (2.25)
DM13613	480 W	13.3–12.0	90–254 VAC	—	36 VDC (34–40 adj)	90%	-10°C to +60°C	5.12 (130)	6.14 (156)	4.96 (126)	4.96 (2.25)
DM1480125	60 W	1.25–1.15	90–254 VAC	—	48 VDC (46–52 adj)	89%	-10°C to +60°C	4.88 (124)	1.97 (50)	4.13 (105)	1.08 (0.49)
DM14810	480 W	10.0–9.2	90–254 VAC	—	48 VDC (46–52 adj)	90%	-10°C to +60°C	5.12 (130)	6.14 (156)	4.96 (126)	4.96 (2.25)

Frequency: 47-63 Hz for all models

1. Depends upon specific model selection, output voltage and/or upon 120 or 240 VAC operation.

THREE PHASE

Catalog Number	Output Power (Watts Max)	Amp Rating	Voltage Range AC	Voltage Range DC	Output Voltage	Efficiency (1)	Operating Temperature	Height (Inches)(Cm.)	Width (Inches)(Cm.)	Depth (Inches)(Cm.)	Weight (Lbs.)(Kg.)
DM32405	120 W	5.0 - 4.3	340-575 VAC	450-820 VDC	24 VDC (24-28 adj)	89%	-10°C to +60°C	4.96 (126)	2.56 (65)	4.65 (118)	1.65 (0.75)
DM32410	240 W	10.0 - 8.6	340-575 VAC	450-820 VDC	24 VDC (24-28 adj)	89%	-10°C to +60°C	5.12 (130)	3.43 (87)	4.96 (126)	2.76 (1.25)
DM32420	480 W	20.0 - 17.1	340-575 VAC	450-820 VDC	24 VDC (24-28 adj)	90%	-10°C to +60°C	5.12 (130)	6.14 (156)	4.96 (126)	4.85 (2.20)

Frequency: 47-63 Hz for all models

1. Depends upon specific model selection, output voltage and/or upon 120 or 240 VAC operation.

DIN Series Cross Reference

Description	Acme Model #	Sola	Rockwell	PULS	Phoenix	Lambda	Omron	Mean Well	IDEC
Single Phase Metal Series									
54W DIN Power Supply 12V 1PH	DM112045		1606-XLP60BQ						
60W DIN Power Supply 24V 1PH	DM124025	SDN 2.5-24-100P	1606-XLP60EQ	SL2.100	2902992	DPP50-24		DR-75-24	PS5R-VD24
60W DIN Power Supply 48V 1PH	DM1480125				2902995			DR-75-48	
480W DIN Power Supply 24V 1PH	DM12420	SDN 20-24-100P	1606-XLS480E	SL20.110		DPP480-24-1	S8VS-48024	DRP-480-24	
480W DIN Power Supply 36V 1PH	DM13613		1606-XLS480G						
480W DIN Power Supply 48V 1PH	DM14810		1606-XLS480F	SL20.113	2866501	DPP480-48-1		DRP-480-48	
"Slim Line" Single Phase, Metal Series									
72W Slim Line DIN PS 12V 1PH	DM11206S							SDR-75-12	
80W Slim Line DIN PS 24V 1PH	DM124033S		1606-XLE80E			DRB100-24-1	S8VS-09024		PS3X-E24AFG
80W Slim Line DIN PS 48V 1PH	DM148017S								
96W Slim Line DIN PS 12V 1PH	DM11208S	SDN 9-12-100C			2902997				PS3X-E12AFG
120W Slim Line DIN PS 24V 1PH	DM12405S	SDN 5-24-100C	606-XLE120E	SL5.102	2904376		S8VS-12024	SDR-120-24	PS5R-VF24
120W Slim Line DIN PS 48V 1PH	DM148025S				2866491			SDR-120-48	
180W Slim Line DIN PS 12V 1PH	DM11215S	SDN 16-12-100C							
240W Slim Line DIN PS 24V 1PH	DM12410S	SDN 10-24-100C	1606-XLE240E	SL10.100	2904372		S8VS-24024	SDR-240-24	PS5R-VG24
240W Slim Line DIN PS 48V 1PH	DM14805S							SDR-240-48	
Plastic Series									
15W Plastic DIN PS 12V	DMP1120125		1606-XLP15B	ML15.121			S8VS-01512	MDR-20-12	PS3L-B12
15W Plastic DIN PS 24V	DMP124006	SDP 06-24 100T	1606-XLP15E	ML15.241			S8VS-01524	MDR-20-24	PS5R-VB24
20W Plastic DIN PS 5V	DMP1504	SDP 5-5-100T	1606-XLP25A	ML30.101	2904374		S8VS-03005	MDR-20-5	PS3L-A05AFF
30W Plastic DIN PS 12V	DMP112025	SDP 2-12-100T	1606-XLP30B	ML30.102	2902998		S8VS-03012	MDR-40-12	PS3L-A12
30W Plastic DIN PS 15V	DMP11502				2903000				
30W Plastic DIN PS 24V	DMP1240125	SDP 1-24-100T	1606-XLP30E	ML30.100	2902991		S8VS-03024	MDR-40-24	PS3L-A24
50W Plastic DIN PS 12V	DMP11204	SDP 3-15-100T	1606-XLP50B	ML50.102	2902999			MDR-60-12	PS3L-D12AFF
50W Plastic DIN PS 24V	DMP12402	SDP 2-24-100T	1606-XLP50E	ML50.100			S8VS-06024	MDR-60-24	PS5R-VD24
50W Plastic DIN PS 48V	DMP14801	SDP 1-48-100T	1606-XLP50F	ML50.105				MDR-60-48	
Three Phase Series									
120W 3 Phase Metal DIN P/S	DM32405	SDN 5-24-480			2904620	DPP120-12-3	S8VK-T12024		
240W 3 Phase Metal DIN P/S	DM32410	SDN 10-24-480	1606-XLE240E-3		2904621	DPP240-24-3	S8VK-T24024		
480W 3 Phase Metal DIN P/S	DM32420	SDN 20-24-480C	1606-XLS480E-3		294622	DPP480-24-3	S8VK-T48024	TDR-480-24	

DIN Rail Utility Box Accessory

15 and 20 Amp

Hubbell's DIN Rail Utility Box offers a labor saving way to provide utility power to any control cabinet. Installing the DIN Rail Utility Box is as easy as snapping the box onto a 35mm DIN Rail and connecting the line, neutral and ground wires to the terminal block.

Utility power for fans, lights, laptop computers, testers or any other power requirement. All Hubbell DIN Rail Utility Boxes may be mounted either vertically or horizontally on the DIN Rail.

15A 125V
NEMA 5-15F
UL CSA
0.5H P

20A 125V
NEMA 5-20R
UL CSA
1 HP

DUPLEX RECEPTACLES

Catalog Number		Color	Description
15A 125V NEMA 5-15R UL CSA 0.5 HP	20A 125V NEMA 5-20R UL CSA 1 HP		
DRUB15	DRUB20	Gray	DIN-Rail mounted duplex receptacles.

GFCI DUPLEX RECEPTACLES

Catalog Number		Color	Description
15A 125V NEMA 5-15R UL CSA 0.5 HP	20A 125V NEMA 5-20RUL CSA 1 HP		
DRUBGFI15	DRUBGFI20	Gray	DIN-Rail mounted GFCI duplex receptacles.
DRUBGFI15AC	DRUBGFI20AC	Gray	DIN-Rail mounted duplex receptacles with aux GFCI contacts.

Hard-wired SPDs

Hubbell hard-wired SPDs are multi-phase surge protective devices and noise filters in compact and affordable packages.

The compact designs allow surge suppression to be installed adjacent to power panels or directly on sensitive equipment in harsh electrical conditions.

Features

- NEMA 4X Enclosure
- Overvoltage technology
- EMI/RFI Noise Rejection
- LED Status Indication
- Suppression Status Alarm
- Coordinated Fuse Technology

						VPR			
Model Number	Surge Current	Configuration	Voltage	MCOV	I_n	L-N	L-G	L-L	N-G
HBL3W100C	100kA	1 Ø, 3-wire+G	120V/240	150V	20kA	900V	1200V	1500V	700V
HBL4W100C	100kA	3 Ø, Wye, 4-wire+G	120V/208Y ①	150V	20kA	900V	1200V	1500V	700V
HBL8W100C	100kA	3 Ø, Wye, 4-wire+G	277V/480Y ②	320V	20kA	1200V	2000V	2500V	1000V
HBL9W100C	100kA	3 Ø, Delta, 3-wire	480V Delta	840V	20kA	N/A	N/A	3000V	N/A

① 120/208Y series also applies to the following voltage 127/220Y

② 277/480Y series also applies to the following voltages 220/380Y, 230/400Y, and 240/415Y

Type 1 SPDs

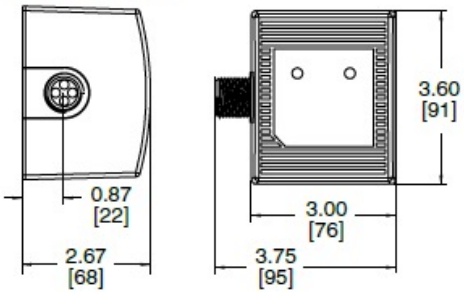
Hubbell brand Spikeshield Type 1 Surge Protective Devices (SPDs) are compact and affordable arresters available in either single or multi-phase models. Spikeshield SPDs offer a simple means to bring down initial surges to manageable levels in a cascaded SPD system.

Their compact design allows surge suppression to be installed adjacent to power panels or directly on sensitive equipment.

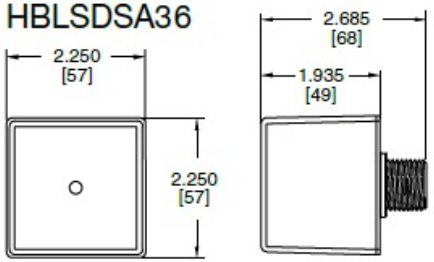
Features

- NEMA 4X Enclosure
- Compact Design
- Designed for Type 1 Applications
- LED Status Indication
- Coordinated Fuse Technology

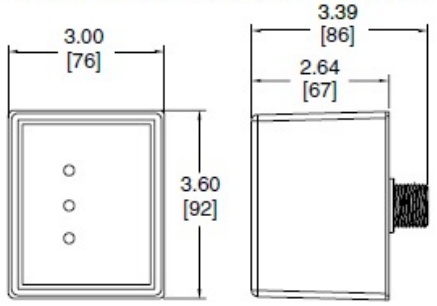
HBL3W50



HBLSDSA36



HBL4SA40, HBL5SA40, HBL8SA40, HBL9SA40, HBL10SA40 and HBL11SA40



Type 1 SPDs

HBL3W50

Provides high-quality surge suppression in a compact and versatile package. This product is ideal for panel builders as well as manufacturers and integrators of instrumentation cabinets for industrial, commercial, and residential applications for single-phase power systems.

HBL3W50

Model Number	Surge Current	Configuration	Voltage	MCOV	SCCR	I_n	VPR		
							L-N	L-G	L-L
HBL3W50	50kA	1 Ø, 3-wire+G, side mounted	120V/240	150V L-N, L-G 300V L-L	25kA	10kA	700V	800V	1200V

HBLDSA36

Designed and listed for indoor or outdoor installation and surge suppression for single-phase three-wire 120/240 Vac 60 Hz electrical services. Two HBLSDSA36 Type 1 SPDs can be installed to provide surge suppression on120/208V three phase four-wire services.

HBLSDSA36

Model Number	Surge Current	Configuration	Voltage	MCOV	SCCR	I_n	VPR			
							L-N	L-G	L-L	N-G
HBLSDSA36	36kA	1 Ø, 3-wire, back mounted	120V/240	150V	22kA	10kA	700V	N/A	1200V	N/A

Type 1 SPDs

HBL4SA40, HBL8SA40

Designed and listed for indoor or outdoor installation and surge suppression of three-phase grounded electrical services from 120/208 Vac up to 480 Vac line to line. Used extensively in service entrance panels to provide an efficient and economical means of surge suppression.

HBL4SA40, HBL8SA40

Model Number	Modes of Protection	Surge Current per Phase	Configuration	Voltage	MCOV	SCCR	I_n	VPR L-N	VPR L-G	VPR L-L	VPR N-G
HBL4SA40	6	40kA	3 Ø, 4-wire	208Y/120V①	180V L-N 360V L-L	200kA	10kA	700V	N/A	1200V	N/A
HBL8SA40	6	40kA	3 Ø, 4-wire	208Y/120V①	420V L-N 840V L-L	200kA	10kA	1500V	N/A	2500V	N/A

① Applicable voltages: 220Y/127V, 208Y/120V

② Applicable voltages: 480Y/277V, 415Y/240V, 400Y/230V, 380Y/220V

Questions or Comments

Tech Service contact number:

800-334-5214 option 1

pdpdtechsupport@hubbellacme.com

HUBBELL COMMERCIAL CONSTRUCTION

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