

## 120W - 480W DIN Rail Mount Single Phase 12V to 72V Output Power Supplies

<https://product.tdk.com/en/power/d1se>

[www.emea.lambda.tdk.com/d1se](http://www.emea.lambda.tdk.com/d1se)



The D1SE120, D1SE240, and D1SE480 series supports the growing trend for economical, single-phase or DC input DIN power supplies for residential, commercial and light-industrial applications. The series offers a balance between functionality and price, combining reliability and compact dimensions with energy saving efficiencies of up to 95.1%. Conservatively rated electrolytic capacitor temperatures offer improved field life-times of over similar products on the market. Available in three power levels, 120, 240 and 480W the series is available with 12, 24, 48 or 72V outputs. All models have boost (peak) power ratings to handle capacitive loading and reliable push-in wire terminations for lower assembly cost. An optional DC Good relay and protective board coating are also available.

Features	Benefits
• AC or DC Input Operation	• Useable in a Wide Range of Applications
• 130% Boost (Peak) Power Capability	• Supports Capacitive and Inductive Loading
• Efficiencies up to 95.1%	• Reduced Energy Consumption
• Low Peak Inrush Energy < 0.6A <sup>2</sup> s	• Prevents Input Circuit Breaker Nuisance Tripping

Model Selector						
Model	Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Maximum Power (W)	Maximum Peak (Boost) Current (A) <sup>(1)</sup>	Maximum Peak (Boost) Power (W) <sup>(1)</sup>
D1SE120-12-A4	12	11.4-15	10	120	15	180 for 80s
D1SE120-12-A5	12	11.4-15	10	120	15	180 for 80s
D1SE120-24-A3	24	22.5-29	5	120	6.5	156 for 80s
D1SE120-24-A4	24	22.5-29	5	120	6.5	156 for 80s
D1SE120-24-A5	24	22.5-29	5	120	6.5	156 for 80s
D1SE240-24-A3	24	22.5-29	10	240	13	312 for 10s
D1SE240-24-A4	24	22.5-29	10	240	13	312 for 10s
D1SE240-24-A5	24	22.5-29	10	240	13	312 for 10s
D1SE240-48-A4	48	45-57	5	240	6.5	312 for 10s
D1SE240-48-A5	48	45-57	5	240	6.5	312 for 10s
D1SE480-24-A3	24	22.5-29	20	480	23	552 for 200s
D1SE480-24-A4	24	22.5-29	20	480	23	552 for 200s
D1SE480-24-A5	24	22.5-29	20	480	23	552 for 200s
D1SE480-48-A4	48	45-57	10	480	12.5	600 for 200s
D1SE480-48-A5	48	45-57	10	480	12.5	600 for 200s
D1SE480-72-A4	72	70-85	6.7	480	8.3	600 for 200s
D1SE480-72-A5	72	70-85	6.7	480	8.3	600 for 200s

D1SE	120	- 24	- Option code
Series	Output Power 120, 240, 480	Output Voltage 24	A3 A3: No DC-OK status LED A4 A4: DC-OK status LED A5 A5: DC-OK status LED, board coating

Related Products		
Type	Part Number	Description
Redundancy module	<a href="#">DRM40</a>	20 to 40A DIN rail Redundancy module
Buffer DIN rail modules	<a href="#">DBM20</a>	20A DIN rail Buffer (hold-up) modules
Mid power DIN rail power supplies	<a href="#">DRB120, 240, 480</a>	120 to 480W AC-DC single phase DIN rail power supplies
Mid to high power premium DIN rail power supplies	<a href="#">DRF120, 240, 480, 960</a>	120 to 960W AC-DC single phase DIN rail power supplies
Mid to high power 3-phase DIN rail power supplies	<a href="#">DRB120-3 - DRB960-3</a>	120 to 960W AC-DC 3-phase DIN rail power supplies
DC-UPS	<a href="#">DUSH</a>	960W DC-UPS DIN Rail Modules
DIN rail mount filters	<a href="#">RSEV</a>	6A to 30A 250Vac single phase EMI filters

Immunity			
Test	Standard	Criterion	Notes
ESD	EN61000-4-2	A	4kV contact 8kV air discharge
Radiated Susceptibility	EN61000-4-3	A	10V/m: 80MHz-1GHz 3V/m: 1.4GHz-6GHz
Electrical Fast Transient Burst	EN61000-4-4	A	Input: 2kV Output: 1kV Signal: 1kV
Surge	EN61000-4-5	A	2kV: Input symmetrical (L-L) 4kV: Input asymmetrical (L-PE) 2kV: Output symmetrical (L-L) 4kV: Output asymmetrical (L-PE) 1kV: Signal line asymmetrical (Signal-PE)
Conducted Susceptibility	EN61000-4-6	A	10V/m: 80MHz-1GHz
Magnetic Fields	EN61000-4-8	A	30A/m: 50Hz, 60s each axis (x, y, z)
Voltage Dips and Input Interruptions	EN61000-4-11 EN61000-4-34	A	500ms
		A	200ms
		A	20ms
		C	5000ms
Voltage Dips and Input Interruptions	SEMI F47-0706	A	1000ms
		A	500ms
		A	200ms
		A	20ms

Notes  
See website for detailed specifications, test methods and installation manual  
(1) See Technical datasheets for conditions  
(2) Average efficiency under 25%, 50%, 75% and 100% load conditions, according to eco-design requirements of EU commission regulation 2019/1782.  
\*25°C ambient, full load.

Specifications				
Model		D1SE120-24-A3	D1SE240-24-A3	D1SE480-24-A3
<b>Input</b>				
Input Voltage Range	Vac	85 - 264		
Input Surge Voltage	Vac	N/A	300 for 30s	300 for 30s
Nominal Input Voltage Range	Vac	100 - 240 (Note: Safety certified for 90 - 264Vac)		
Input Frequency	Hz	Safety certified for 50/60		
DC Input Voltage Range	Vdc	110 - 250 (Nominal) +20% -15%. See Technical Specification for external DC fuse		
Input Current (Maximum)	A	1.5	3	5.6
Inrush Current 100 / 120 / 240Vac	A	15 / 19 / 29	12 / 15 / 35	9 / 11 / 20
Leakage Current (Maximum)	mA	0.55mA		
Power Factor (230Vac)	-	0.92	0.95	0.95
Harmonic Compliance	-	Meets EN61000-3-2 Class A		
No Load Power Consumption	W	0.8	0.8	0.8
Hold Up Time at 230Vac	ms	25	25	25
Efficiency 100 / 120 / 240Vac	%	88.4 / 90.2 / 92	92.4 / 93.5 / 94.4	92.0 / 93.3 / 95.1
Conducted & Radiated EMI	-	Residential, commercial and light-industrial environments		
Immunity	-	See immunity table		
Insulation Class	-	Class 1		
Safety Certifications and Markings	-	IEC/UL/EN 61010-2-201, IEC/UL/EN 62368-1 Ed.3, BIS, CE Mark and UKCA Mark		
<b>Output</b>				
Switching Frequency (Output Converter)	kHz	156 to 346kHz (load dependent)	93.7 to 116 (load dependant)	114 to 209 (load dependant)
Line Regulation	%	0.02%		
Load Regulation	%	0.25%		
Ripple & Noise (-10 to 70°C ambient)	mV	45		
Minimum Load	-	No minimum load required		
Maximum Load Capacitance	uF	2,870 (5,000 start up)	4,800 (10,000 start up)	7,670 (20,000 start-up)
Overcurrent Protection (Auto recovery), Min	A	6.5	13	23
Overvoltage Protection, Auto Recovery, Max	V	32	33	33
Overtemperature Protection	-	Yes. Auto recovery		
Remote Sense	-	None		
Remote On/Off	-	None		
DC Good	-	Optional closed contact relay (See model selector)		
Indicator	-	Optional Green LED indicates DC is OK (See model selector)		
Parallel Operation	-	Not possible		
<b>Environmental</b>				
Operating Temperature Nominal (-40C start-up)	°C	-25 - +70 (derate >55)	-25 - +70 (derate >55)	-25 - +70 (derate >55), >108Vac
Storage Temperature	°C	-40 to +85		
Humidity (Non condensing)	%RH	95 maximum (Operating & Storage)		
Cooling	-	Convection		
Altitude	m	3,000 nominal, (6,000 maximum no UL certification)		
IP Rating	-	IP20		
Withstand Voltage (For 1 minute)	Vdc	Input to Output 5,000, Input to GND 3,100V, Output to GND and signals 750		
Vibration (Non operating)	-	IEC 60068-2-6. 2g / 10 500Hz, 1 hour/direction X,Y,Z		
Shock (Non operating)	-	I30g / 11ms ±5ms, 3 bumps/direction, 9 bumps total		
<b>Other</b>				
Weight (Typ)	g	460	615	900
Size (WxHxD)	mm	38 x125 x 110	44 x 125 x 127	60 x 125 x 129
Size (WxHxD)	Inches	1.50 x 4.92 x 4.33	1.50 x 4.92 x 5	2.36 x 4.92 x 5.08
Case Material	-	Aluminum		
DIN Rail Type	-	TS-35/7.5 or TS35/15		
MTBF	Hours	See Product Specification on website		
Warranty	Years	3		

**Notes**

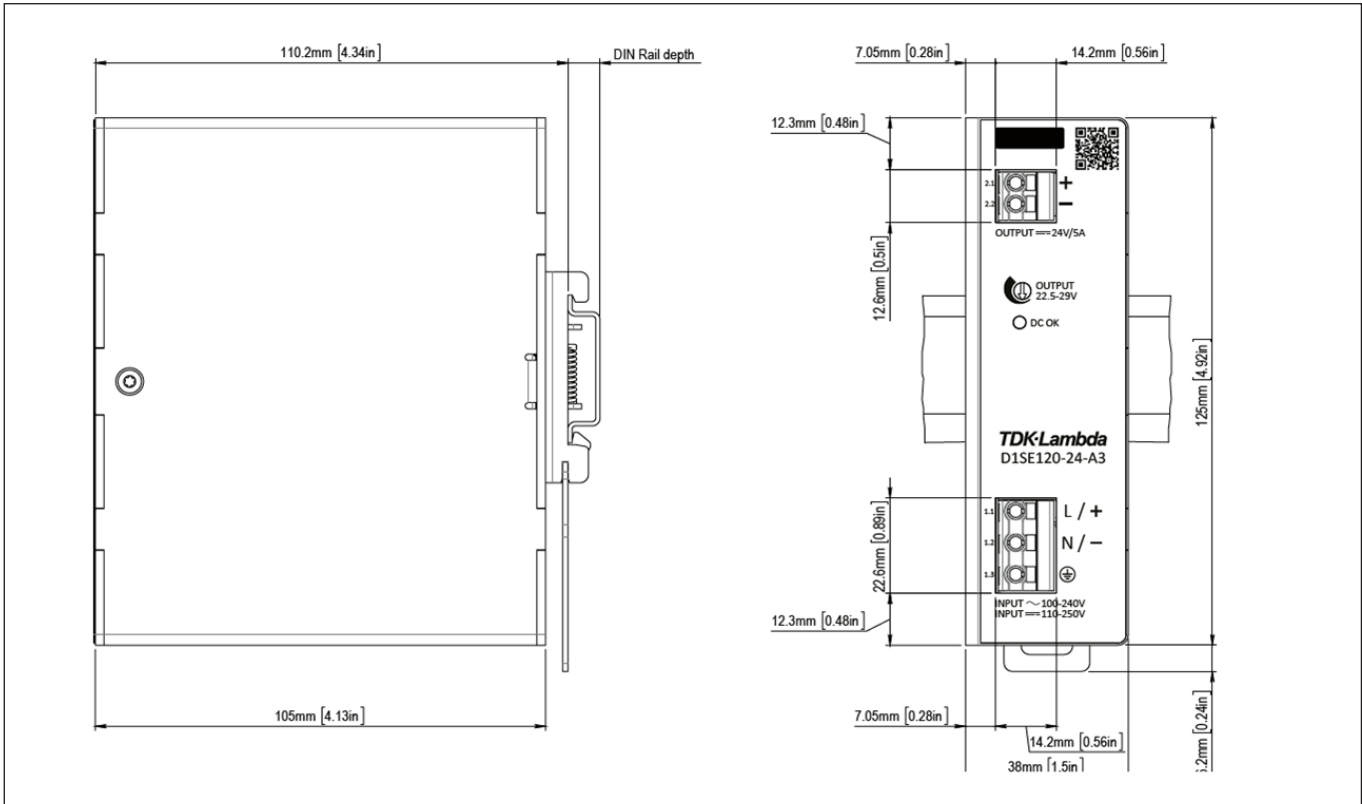
See website for detailed specifications, test methods and installation manual

(1) See Technical datasheets for conditions

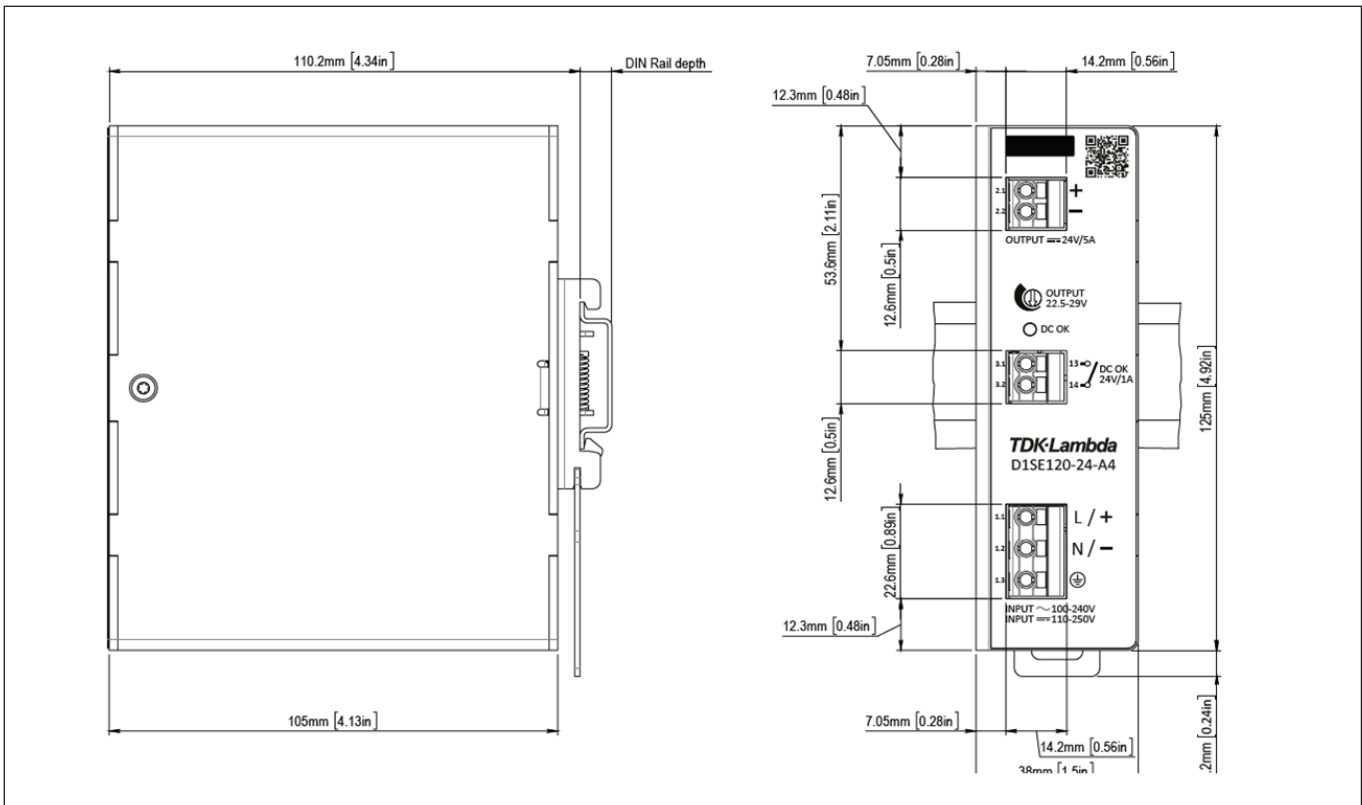
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\*25°C ambient, full load.

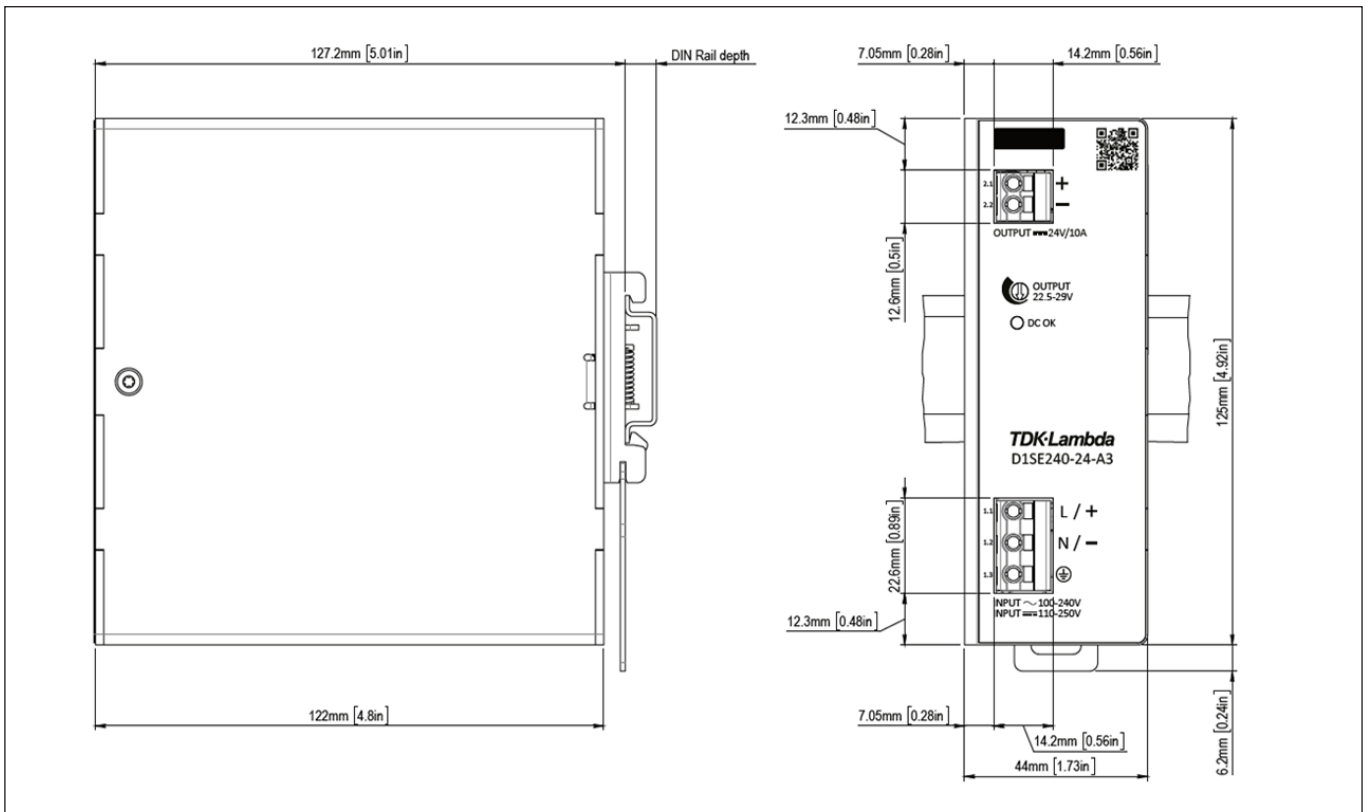
**Outline Drawing D1SE120-24-A3**



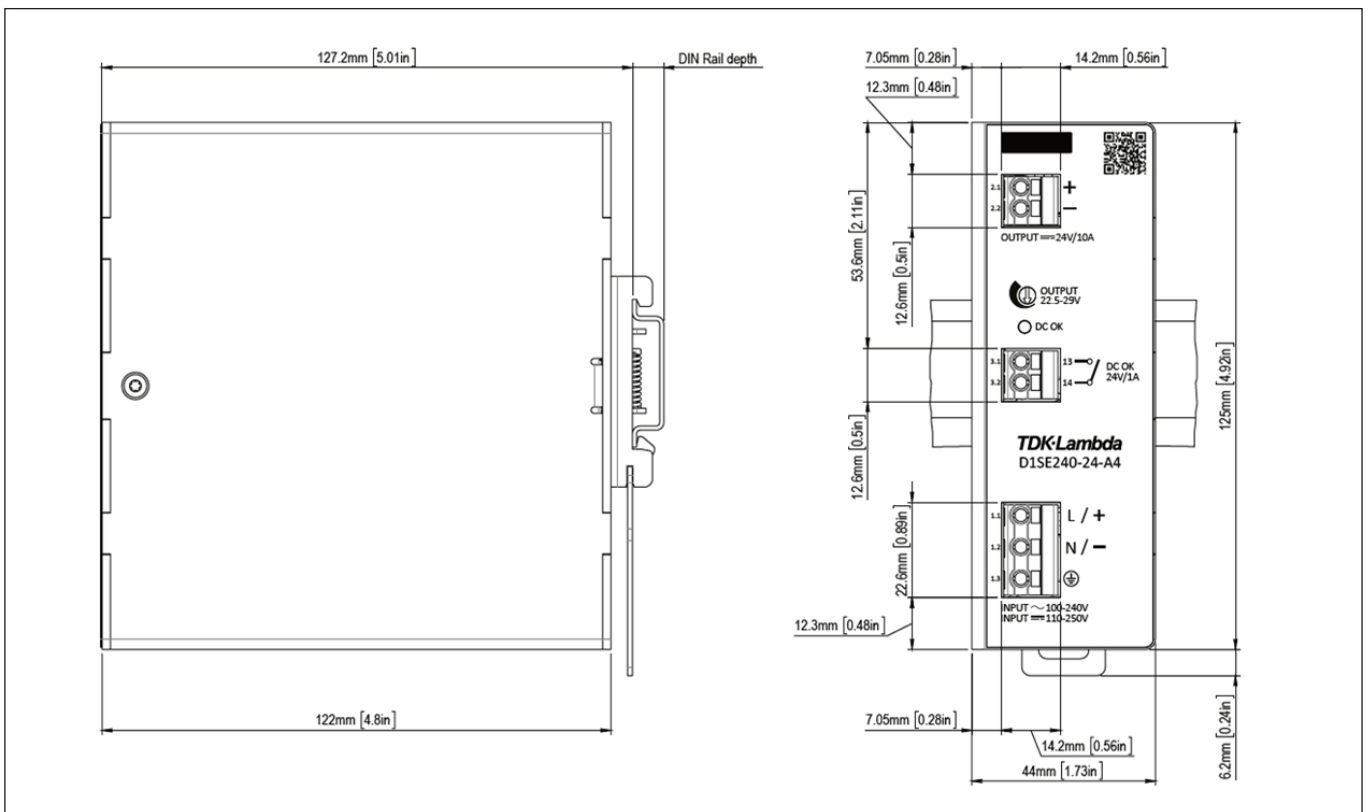
**Outline Drawing D1SE120-24-A4/-A5**



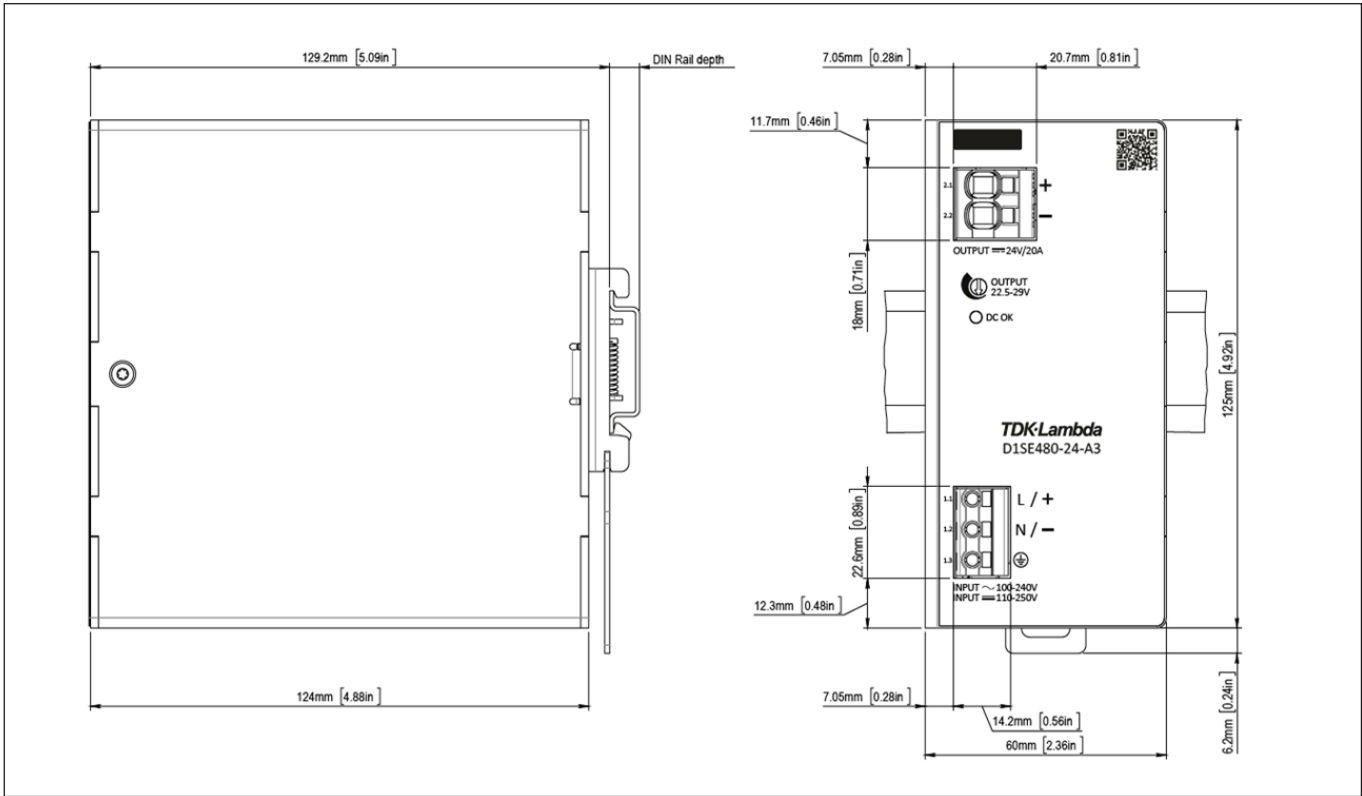
## Outline Drawing D1SE240-24-A3



## Outline Drawing D1SE240-24-A4/-A5



**Outline Drawing D1SE240-24-A3**



**Outline Drawing D1SE480-24-A4**





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