

120W - 480W DIN Rail Mount Single Phase 24V Output Power Supplies

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

www.emea.lambda.tdk.com/d1se



Industrial



Test



Semi-Fab



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 provides a regulated 24V output. 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 < 0.6A²s	• 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) ⁽¹⁾	Maximum Peak (Boost) Power (W) ⁽¹⁾
D1SE120-24-A3	24	22.5-29	5	120	6.5 for 80s	156 for 80s
D1SE120-24-A4	24	22.5-29	5	120	6.5 for 80s	156 for 80s
D1SE120-24-A5	24	22.5-29	5	120	6.5 for 80s	156 for 80s
D1SE240-24-A3	24	22.5-29	10	240	13 for 10s	312 for 10s
D1SE240-24-A4	24	22.5-29	10	240	13 for 10s	312 for 10s
D1SE240-24-A5	24	22.5-29	10	240	13 for 10s	312 for 10s
D1SE480-24-A3	24	22.5-29	20	480	23 for 200s	552 for 200s
D1SE480-24-A4	24	22.5-29	20	480	23 for 200s	552 for 200s
D1SE480-24-A5	24	22.5-29	20	480	23 for 200s	552 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	DRM40	20 to 40A DIN rail Redundancy module
Buffer DIN rail modules	DBM20	20A DIN rail Buffer (hold-up) modules
Mid power DIN rail power supplies	DRB120, 240, 480	120 to 480W AC-DC single phase DIN rail power supplies
Mid to high power premium DIN rail power supplies	DRF120, 240, 480, 960	120 to 960W AC-DC single phase DIN rail power supplies
Mid to high power 3-phase DIN rail power supplies	DRB120-3 - DRB960-3	120 to 960W AC-DC 3-phase DIN rail power supplies
DC-UPS	DUSH	960W DC-UPS DIN Rail Modules
DIN rail mount filters	RSEV	6A to 30A 250Vac single phase EMI filters

Specifications					
Model		D1SE120-24-A3		D1SE240-24-A3	D1SE480-24-A3
Input					
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	23	25	23	
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 61010-2-01, IEC/UL/EN 62368-1 Ed.3, BIS, CE Mark and UKCA Mark			

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
			500ms
			200ms
			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
Output				
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), Minimum	A	6.5	13	23
Overvoltage Protection, Auto Recovery, Maximum	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		
Environmental				
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)	-	130g / 11ms ±5ms, 3 bumps/direction, 9 bumps total		
Other				
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 - Telcordia SR-332 issue 4*	Hours	3,010,000	1,480,000	1,180,000
Warranty	Years	3		

Notes

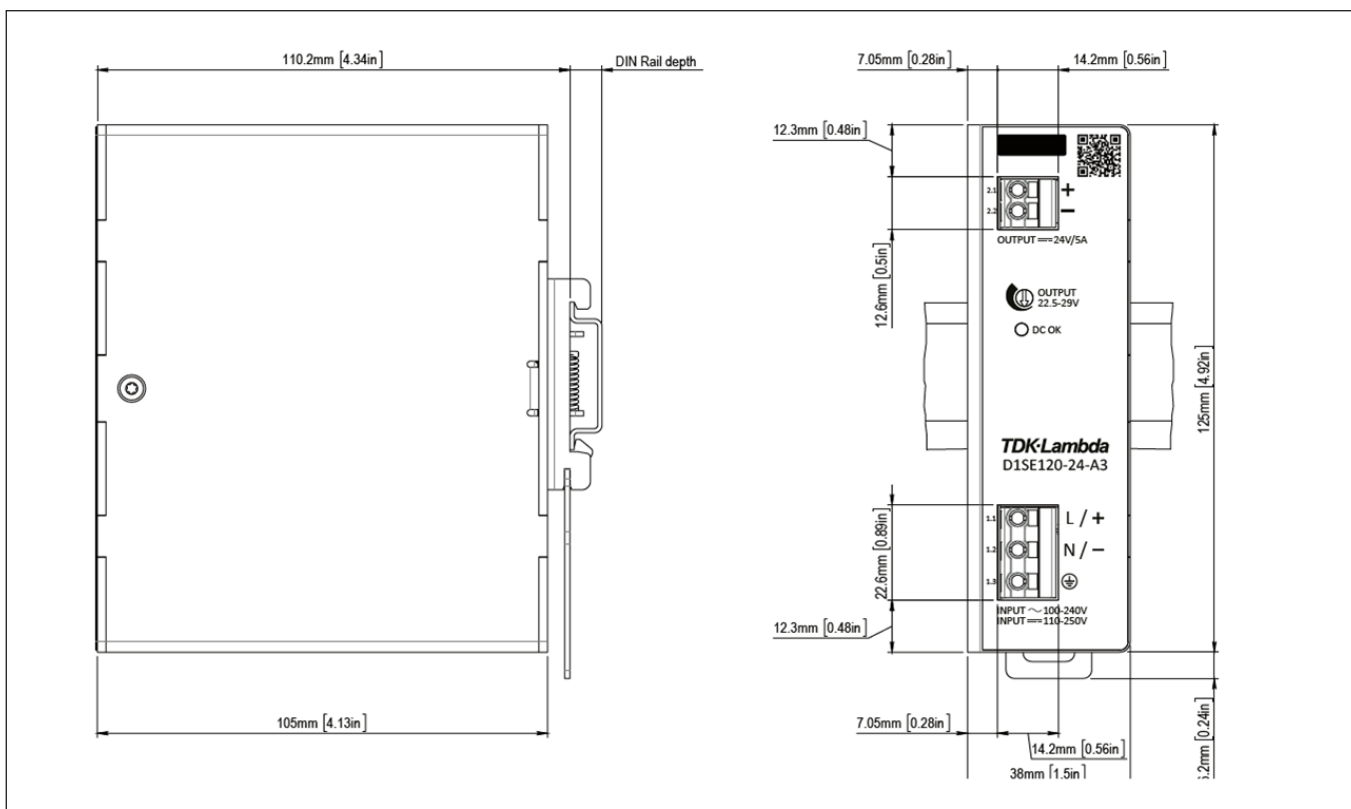
See website for detailed specifications, test methods and installation manual

(1) See Technical datasheets for conditions

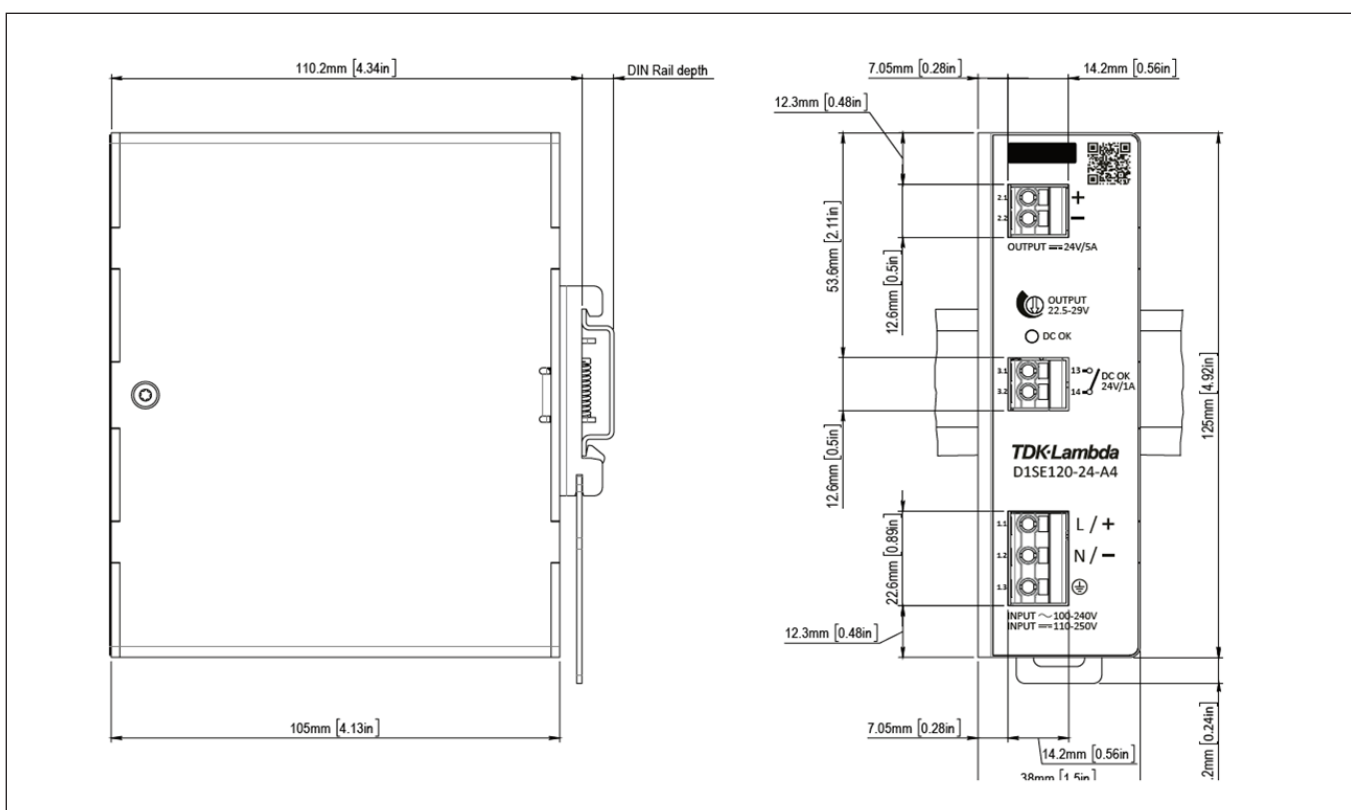
(2) Average efficiency under 25%, 50%, 75% and 100% load conditions, according to eco-design requirements of EU commission regulation 2019/1782.

*25°C ambient, full load.

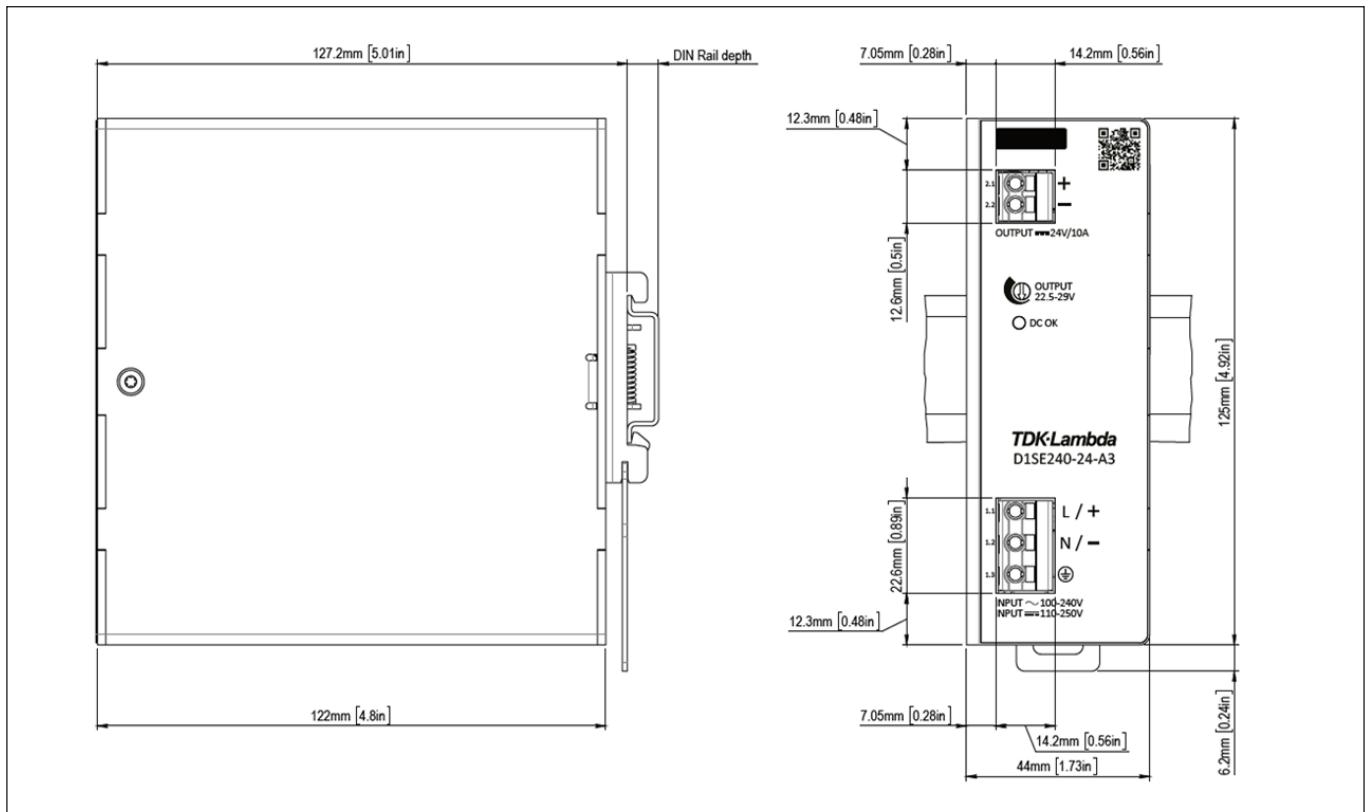
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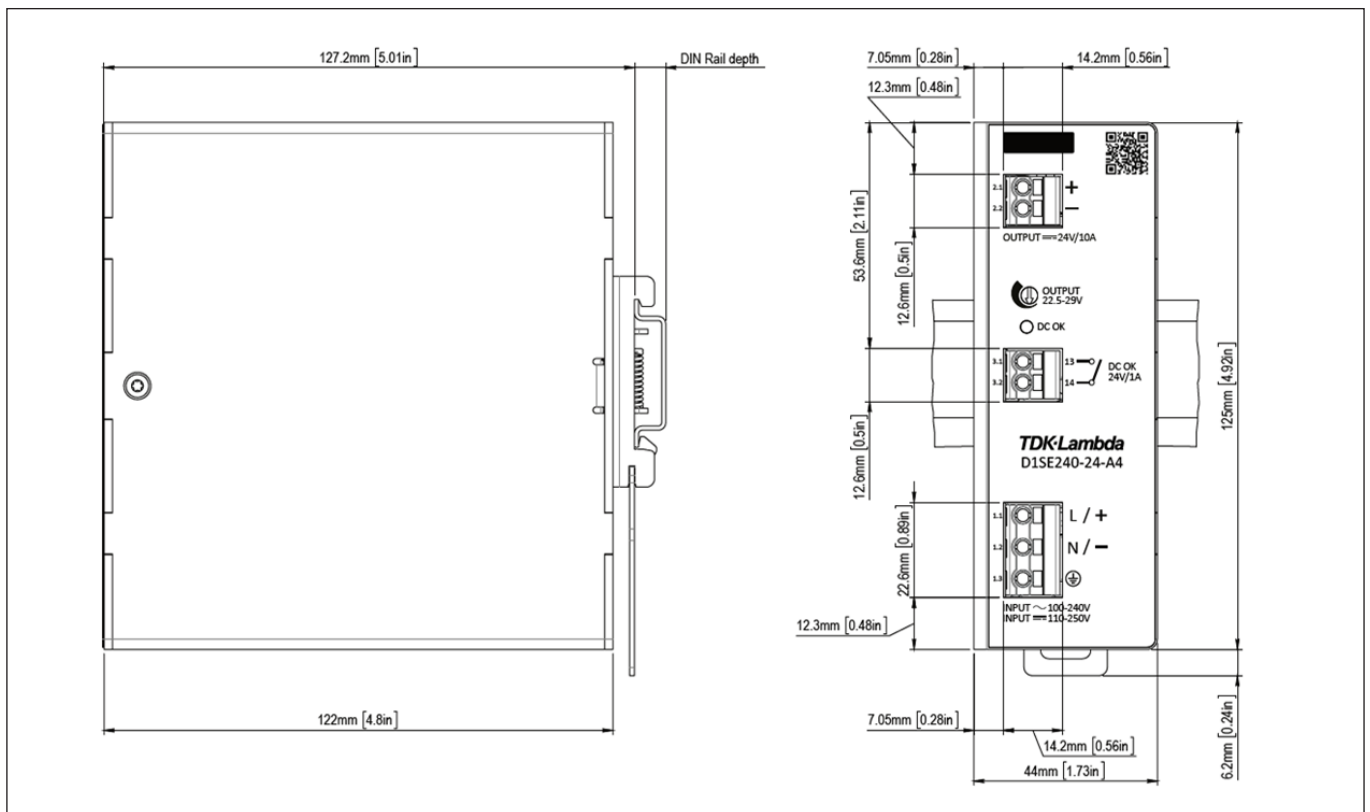
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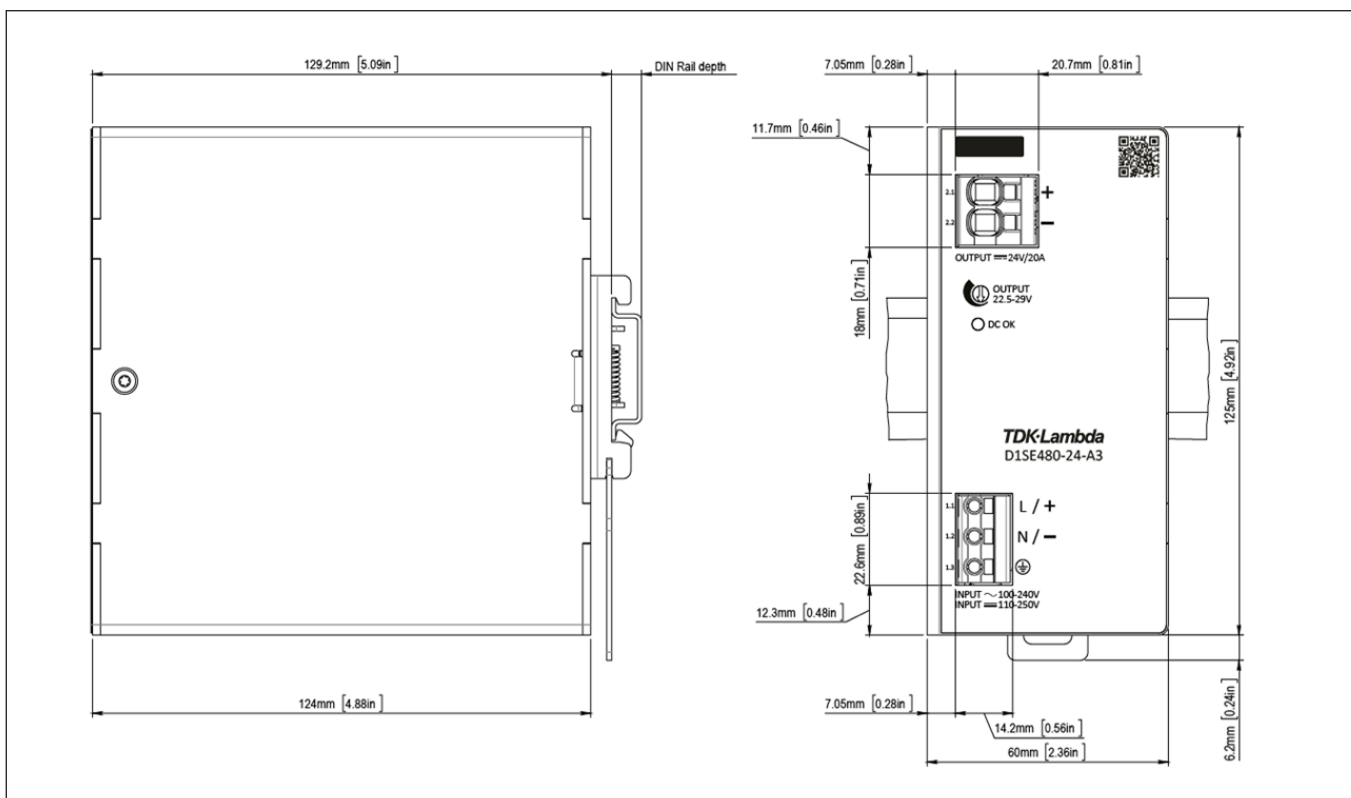
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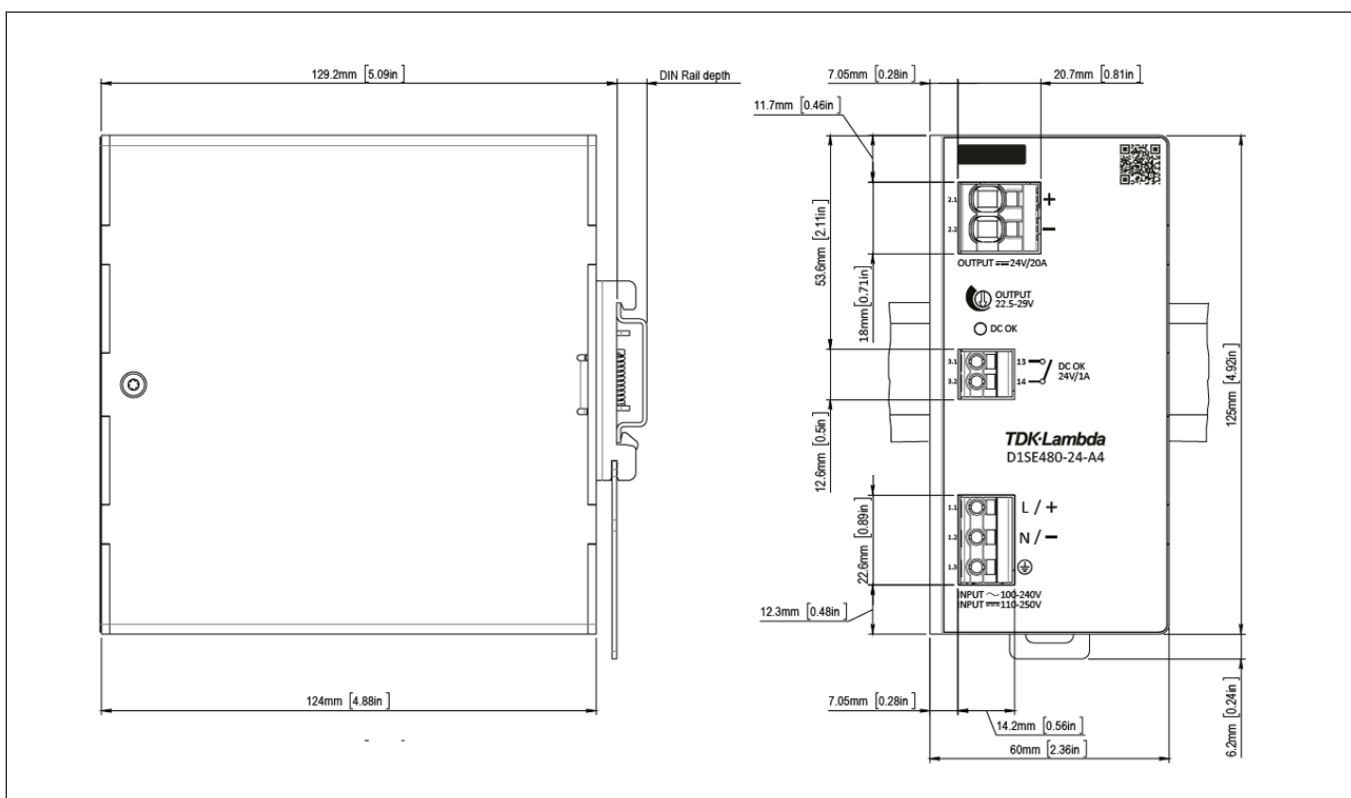
Outline Drawing D1SE240-24-A4/-A5



Outline Drawing D1SE240-24-A3



Outline drawing D1SE480-24-A4





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