



## Technical Information

### EP2401

Product name  
**EP2401**



Description	EP2401
	The ultra-compact and affordable EP series is designed for industrial applications that require reliable power in a small space. The EP units operate with a universal AC input range and provide full power up to 55°C. All models in the series are certified to IEC/EN/UL 60950-1 & IEC/EN/UL 62368-1 for Information Technology Equipment (ITE) and UL 508 Industrial Control Equipment (ICE) certified. The series is also fully compliant with the RoHS Directive. NEC Class 2 and Limited Power Source (LPS) approvals are also available for this product.

Characteristics	
	Ultra compact size and galvanic isolation up to 3.0kVac between input to output
	Universal AC input voltage and full power from -10°C to +55°C operation
	Up to 88% efficiency
	Low earth leaking current < 0,5mA @ 240Vac
	NEC Class 2 / Limited Power Source (LPS) certified
	Overvoltage / Overcurrent / Over Temperature Protections
	Meet Surge Immunity IEC 61000-4-5, Level 4 (CM: 4kV, DM: 2kV)

Input	
Nominal Input Voltage	100 - 240 VAC
Input Voltage Range	85 - 264 VAC
Nominal Input Frequency	50 - 60 Hz
Input Frequency Range	47 - 63 Hz
Input Current	< 0.80A / 115 VAC < 0.40A / 230 VAC
Efficiency	88 % at 230 VAC
Max Power Dissipation	No load < 0.5W/115 VAC & 230 VAC 100% load < 2.5W/115 VAC & 230 VAC
Max. Inrush current	<30A / 115VAC <60A / 230VAC
Leakage Current	< 0.5 mA/240 VAC



<b>Output</b>	
Nominal Output Voltage	24 V
Factory Set Point Tolerance	± 1.0 %
Output Voltage Adjustment Range	21.6 - 26.4 VDC
Output Current	1.25 A (30W max.)
Output Power	30 W
Line Regulation	< 1% (at 85-264 VAC, 100% load)
Load Regulation	< 1 % (at 85-264VAC, 0-100% load)
PARD (20MHz) <sup>2</sup>	< 150m Vpp at > 0°C to 70°C < 500m Vpp at 0°C to -20°C
Rise Time	< 50 ms at nominal input (100% load)
Start-up Time	<3000ms typ. at 115Vac (100% load) <1600ms typ. at 230Vac (100% load)
Hold-up Time	>20ms typ. at 230Vac (100% load)
Dynamic Response (Overshoot & Undershoot O/P Voltage)	± 5% @ 85-264Vac Input, 0-50% load, 50-100% (Slew Rate: 0.1A/µs, 50% duty cycle @ 5Hz to 100Hz)
Start-up with Capacitive Loads	3,000 µF max.

<b>Protection</b>	
Overvoltage	<34.8 V, SELV output, Auto-Recovery
Overload/ Overcurrent	110 - 150% of rated load current, Hiccup Mode, Non-Latching (Auto-recovery when the fault is removed)
Over Temperature	Auto-Recovery
Short Circuit	Auto-Recovery when fault is removed
Internal Fuse at L Pin	T3.15A
Degree of Protection	IP20
Protection Against Shock	Class I with PE (Primary Earth) connection

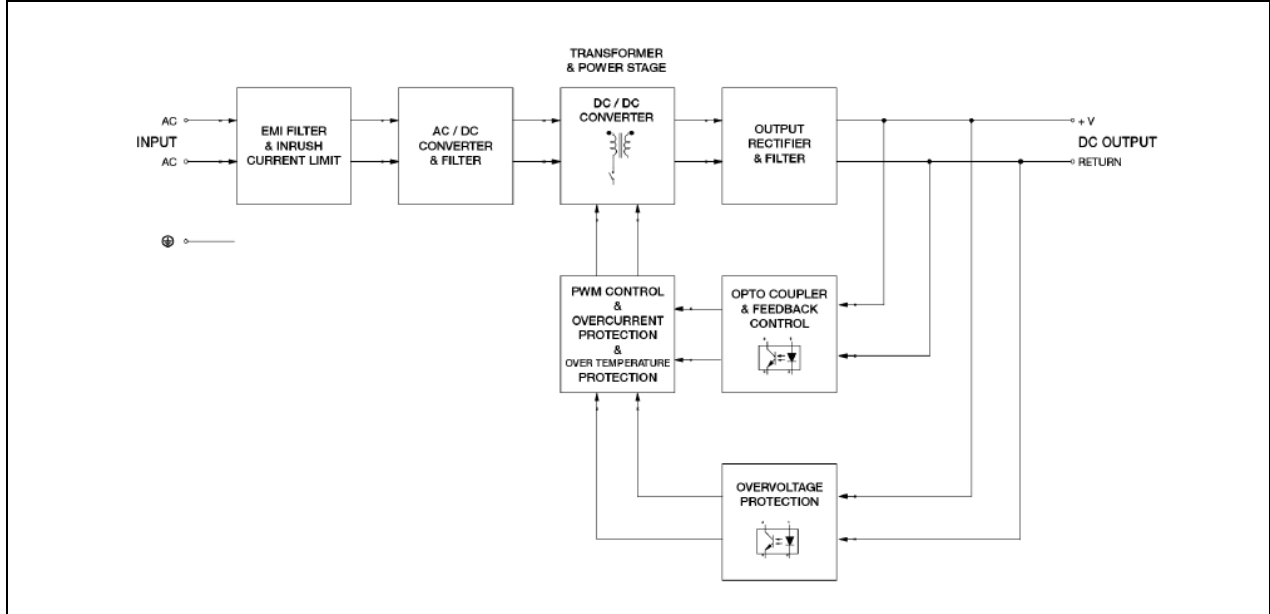
<b>Environment</b>	
Surrounding Air Temperature	-20°C to +70°C
Storage Temperature	-40 to +85°C
Power De-rating (temperature)	-10°C to -20°C de.rate power by 5%/°C > 55°C de-rate power by 3.33% / °C
Operating Humidity	5 to 95% RH (Non-Condensing)
Operating Altitude	0 – 2,000 m
Vibration	Non-operating: IEC 60068-2-6, Random: 5 - 500Hz; 2.09Grms; 20 min per axis for all X, Y, Z directions Operating: IEC 60068-2-6, Sine Wave: 10 - 500Hz @ 19.6m/s <sup>2</sup> (2G peak); 10 min per cycle, 60 min for X direction
Shock Test	Non-operating: IEC 60068-2-27, Half Sine Wave: 50G for duration of 11ms; 3 times per direction Operating: IEC 60068-2-27, Half Sine Wave: 10G for duration of 11ms; 1 time in X direction
Over Voltage Category	II
Pollution Degree	2



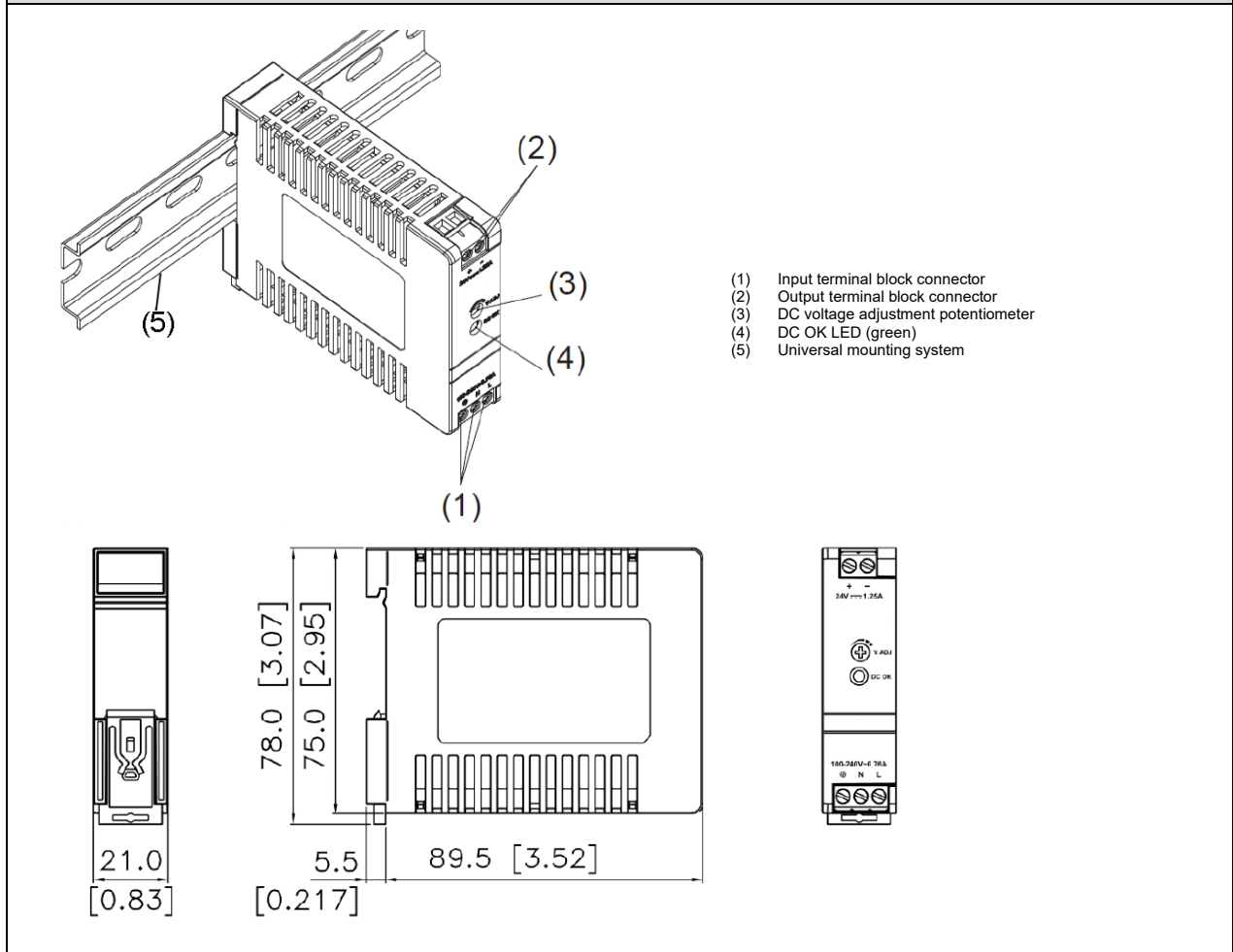
Safety/ EMC	
Safety Entry Low Voltage	SELV (EN 60950)
Electrical Safety	TÜV Bauart: EN 60950-1, EN 62368-1 UL/cUL recognized: UL 60950-1, CSA C22.2 No. 60950-1 (File No. E131881), UL 62368-1, CSA C22.2 No. 62368-1 (File No. E131881) CCC: GB9254, GB17625.1 and GB4943.1
Industrial Control Equipment	UL/cUL listed UL 508 and CSA C22.2 No. 107.1-01 (File No. E338991)
Class 2 Power Supply	UL/cUL recognized UL 60950-1, CSA C22.2 No. 60950-1 (File No. E131881) UL 62368-1, CSA C22.2 No. 62368-1 (File No. E131881)
Limited Power Source (LPS)	CB Scheme; IEC 60950-1, IEC 62368-1
CE	In conformance with EMC Directive 2014/30/EU and Low Voltage Directive 2014/35/EU
UKCA	In conformance with 2016 No. 1101. The Electrical Equipment (Safety) Regulations 2016 and 2016 No. 1091 The Electromagnetic Compatibility Regulations 2016
Galvanic Isolation	Input-Output: 3 KVAC Input-Ground: 1.5 KVAC Output-Ground: 0,5 KVAC
Emissions (CE & RE)	Generic Standards: EN 61000-6-3, EN 61000-6-4 CISPR 32, EN 55032, FCC Title 47: Class B
Immunity	Generic Standards: EN 55024
Electrostatic Discharge	IEC 61000-4-2 Criteria A Air Discharge: 8kV (Level 3) Contact Discharge: 8kV (Level 4)
Radiated Field	IEC 61000-4-3 Level 3 Criteria A 80MHz-1GHz, 10V/M with 1kHz tone / 80% modulation
Electrical Fast Transient / Burst	61000-4-4 Level 4 Criteria A 4kV
Surge	IEC 61000-4-5 Level 4 Criteria A Common Mode: 4kV Differential Mode: 2kV
Conducted	IEC 61000-4-6 Level 3 Criteria A 150kHz-80MHz 10Vrms
Power Frequency Magnetic Fields	IEC 61000-4-8 Criteria A 1A/Meter
Voltage Dips and Interruptions	IEC 61000-4-11 >100% dip; 1 cycle (20ms)
Voltage Fluctuation and Flicker	IEC/EN 61000-3-3



**Block Diagram:**



**Mechanical Data**





Dimensions L x W x D in mm	75 x 21 x 89.5
Weight in kg	0.10
Case Cover/ Chassis	Plastic
Indicator	Green LED (DC-OK)
Cooling	Convection
Terminal	Input: 3 Pins (rated 300V/16A) Output: 2 Pins (rated 300V/16A)
Wire	Input/Output: AWG 26-12
Mounting rail	Standard TS35 DIN rail in accordance with EN 60715
Noise (1 Meter from power supply)	SPL < 25dBA

