



Technical Information

DP2410

Product name
DP2410



Description	DP2410
	The DP2410 three-phase DIN rail power supply series provides a 24 V output voltage. These products are housed in a rugged yet lightweight all-aluminum enclosure that can withstand shock and vibration loads in accordance with IEC 60068-2. The unit operates over a wide temperature range of -25°C to +80°C and also offers a universal AC input voltage range for 3-phase from 320 Vac to 600 Vac or 2-phase from 360 Vac to 600 Vac, without power derating. The coating allows the DP2410 to be certified to ATEX and Class I, Div 2 for use in hazardous areas.

Characteristics	
	Universal AC input voltage range
	Power will not de-rate for the entire input voltage range
	Power Boost of 150% for 5 seconds
	Full corrosion resistant aluminium casing
	Conforms to harmonic current IEC/EN 61000-3-2, Class A
	Extreme low temperature cold start at -40°C
	Conformal coating on PCBAs to protect against common dust and chemical pollutants
	Hazardous Locations approval to ATEX and Class I, Div 2 (DRP024V240W3BA)
	Certified according to IEC/EN/UL 62368-1

Eingang	
Nominal Input Voltage	3 x 400-500 Vac
Input Voltage Range	3 x 320-600 Vac (3-Phase) or 2 x 360-600 Vac (2-Phase)
Nominal Input Frequency	50-60 Hz
Input Frequency Range	47-63 Hz
DC-Input Voltage Range	450-800 VDC
Input Current	< 0.75A at 3 x 400 Vac, < 0.65 A at 3 x 500 Vac
Efficiency at 100% load	> 91.0% at 3 x 400 Vac & 3 x 500 Vac
Max. Power Dissipation	0% load: < 6.5W at 3x400 VAC & 3x500 VAC 100% load: < 23W at 3x400 VAC & 3x500 VAC
Max. Inrush Current (Cold Start)	< 40 A at 3 x 400 Vac & 3 x 500 Vac
Leakage Current	< 3.5 mA at 500 Vac



Output	
Nominal Output Voltage	24 Vdc
Factory Set Point Tolerance	24 Vdc \pm 2.0%
Output Voltage Adjustment Range	24-28 Vdc
Output Current	10A (continuously operating at 24V) 15A (Powerboost for 5 sec. at 24V)
Output Power	240 W (continuously operating at 24V) 360 W (Power Boost for 5 sec. at 24V)
Line Regulation	<0.5% (at 3 x 320-600 VAC input, 100% load)
Load Regulation	<1.0% (at 3 x 320-600 VAC input, 0-100% load)
PARD* (20 MHz)	<150 mVpp
Rise Time	<100 ms at nominal input (100% load)
Start-up Time	<.1000 ms at nominal input (100% load)
Hold-up Time	> 20 ms at 3 x 400 VAC, > 40 ms at 3 x 500 VAC (100% load)
Dynamic Response (Overshoot & Undershoot O/P Voltage)	\pm 5% at 3 x 320-600 VAC input, 0-100% load (Slew Rate: 0.1 A/ μ s, 50% duty cycle at 5 Hz to 1 KHz)
Start-up with Capacitive Loads	10,000 μ F

Environment	
Surrounding Air Temperature	-25°C to +80°C (-40°C Cold Start), 5-95% RH (non condensing)
Storage Temperature	-40°C to +85°C
Temperature Derating (Power)	Vertical mounting: > 50°C derating by 2.5 % / °C > 70°C derating by 5 % / °C Horizontal mounting: > 40°C derating by 2.5 % / °C > 60°C derating by 5 % / °C
Operating Altitude	0 to 2,500 Meters for ITE application 0 to 2,000 Meters for Industrial application
Shock Test	Non-operating: IEC 60068-2-27, 30 G (300 m/S ²) for a duration of 18 ms, 1 time per direction, 2 times in total
Vibration	Non-operating: IEC 60068-2-6, 10 Hz to 500 Hz @ 30 m/S ² (3G peak); 60 min per axis for all X, Y, Z direction
Bump Test	Operating: IEC 60068-2-29, Half Sine Wave: 10G for a duration of 11 ms, 1,000 times per direction, 6,000 times in total
Over Voltage Category	III According to IEC/EN 62477-1 / EN 60204-1 (clearance and creepage distances) and IEC 62103 (safety part)
Pollution Degree	2

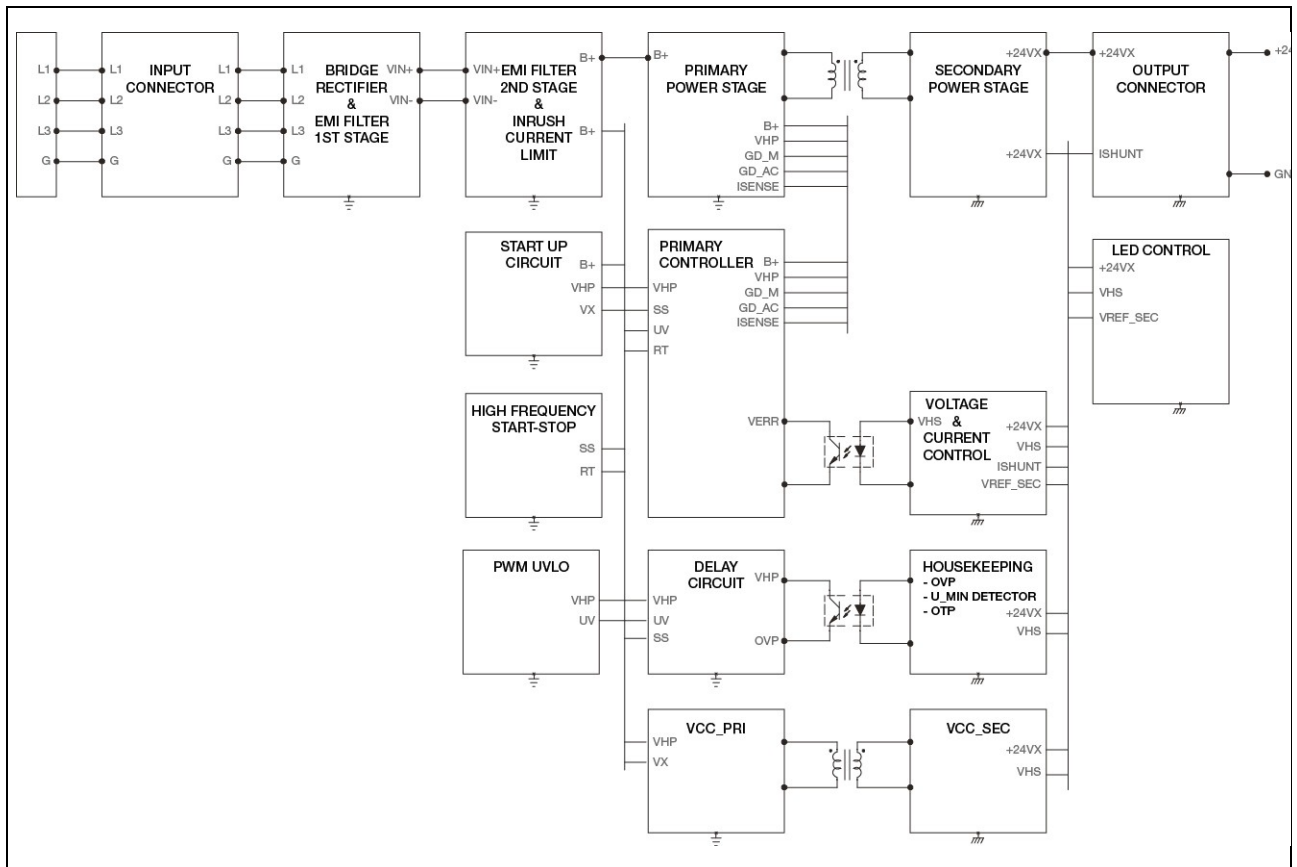
Protection	
Overvoltage	< 32 V \pm 10%, SELV Output, Hiccup Mode, Non-Latching (Auto- Recovery)
Overload / Overcurrent	150 of rated load current, Hiccup Mode, Non-Latching (Auto-Recovery)
Over Temperature	< 80°C Surrounding Air Temperature at 100% load, Non-Latching (Auto-Recovery)
Short Circuit	Hiccup Mode, Non-Latching (Auto-Recovery when the fault is removed)
Transient Surge Voltage Protection	MOV (Metal Oxide Varistor)
Internal Fuse	T 3.15 A
Degree of Protection	IP20
Protection Against Shock	Class I with PE* connection
MTBF (Telcordia SR-332)	> 500,000 hrs. as per Telcordia SR-332 I/P: 3 x 400 VAC, O/P: 100% load, Ta: 25°C
Expected Cap Life Time	10 years (3 x 400 VAC & 3 x 500 VAC, 50% load at 40°C)

Protection/EMC	
Electrical Equipment of Machines	EN/BS EN 60204-1 (over voltage category III)
Electrical Equipment for Use in Electrical Power Installations	IEC/EN/BS EN 62477-1 / IEC 62103
Safety Entry Low Voltage	SELV (IEC 60950-1)
Electrical Safety	SIQ Bauart: EN 62368-1 UL/cUL: UL 60950-1 and CSA C22.2 No. 60950-1 (File No. E191395)

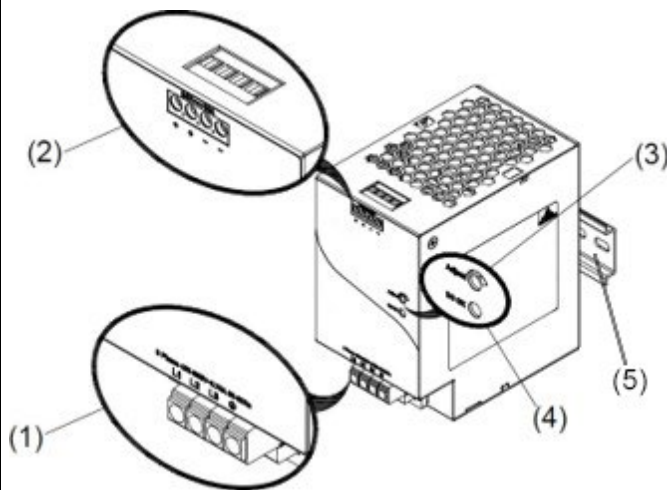


	UL 62368-1 and CSA C22.2 No. 62368-1 (File No. E191395) CB Scheme: IEC 60950-1, IEC 62368-1 UKCA: BS EN 62368-1,	
Industrial Control Equipment	UL/cUL: UL 508 and CSA C22.2 No. 107.1-01 (File No. E315355) CSA C22.2 No. 107.1-01 (File No. 181564)	
Hazardous Location/ ATEX	cCSAus: CSA C22.2 No. 213-M1987, ANSI / ISA 12.12.01:2007 [Class I, Division 2, Group A, B, C, D T4, Vertical: Ta = -25°C to +80°C, > +50°C derating, Horizontal: Ta = -25°C to +70°C, > +40°C derating]] ATEX: EN 60079-0:2012, EN 60079-15:2010 [II 3G Ex nA IIC T4 Gc, (Vertical: Ta = -25°C to +80°C, > +50°C derating, Horizontal: Ta = -25°C to +70°C, > +40°C derating)] Certificate No. EPS 13 ATEX 1 575 X	
BIS	IS 13152-1	
CE	In conformance with EMC Directive 2014/30/EU and Low Voltage Directive 2014/35/EU In conformance with Equipment for explosive atmospheres (ATEX) directive 2014/34/EU	
UKCA	In conformance with Electrical Equipment (Safety) Regulations 2016 No. 1011 and The Electromagnetic Compatibility Regulations 2016 No. 1091	
Galvanic Isolation	Input to Output: 4 kVac Input to Ground: 2 kVac Output to Ground: 1,5 kVac	
Emissionen (CE & RE)	Generic Standards: CISPR 32, EN/BS EN 55032, CISPR 11, EN/BS EN 55011, FCC Title 47: Class B	
Component Power Supply for General Use	EN/BS EN 61204-3	
Immunity	Generic Standards: EN/BS EN 55024, EN/BS EN 61000-6-2	
Electrostatic Discharge	IEC 61000-4-2	Level 4, Criteria A, Air Discharge 15kV; Contact Discharge: 8kV
Radiated Field	IEC 61000-4-3	Level 3 Criteria A 80 MHz-1 GHz, 10 V/M, 80% modulation (1 KHz) 1.4 GHz-2 GHz, 3 V/M, 80% modulation (1 KHz) 2 GHz-2.7 GHz, 1 V/M, 80% modulation (1 KHz)
Electrical Fast Transient / Burst	IEC 61000-4-4	Level 3, Criteria A, 2kV
Surge	IEC 61000-4-5	Level 3 Criteria A Common Mode: 2 kV Differential Mode: 1 kV
Conducted	IEC 61000-4-6	Level 3 Criteria A, 150 kHz-80 MHz, 10 Vrms
Power Frequency Mag- netic Fields	IEC 61000-4-8	Criteria A, 30A/Meter
Voltage Dips and Interrup- tions	IEC 61000-4-11	100% dip; 1 cycle (20 ms); Self Recoverable
Low Energy Pulse Test (Ring Wave)	IEC 61000-4-12	Level 3 Criteria A, Common Mode: 2 kV Differential Mode: 1 kV
Harmonic Current Emis- sion	IEC/EN/BS EN 61000-3-2, Class A	
Voltage Fluctuation and Flicker	IEC/EN/BS EN 61000-3-3	

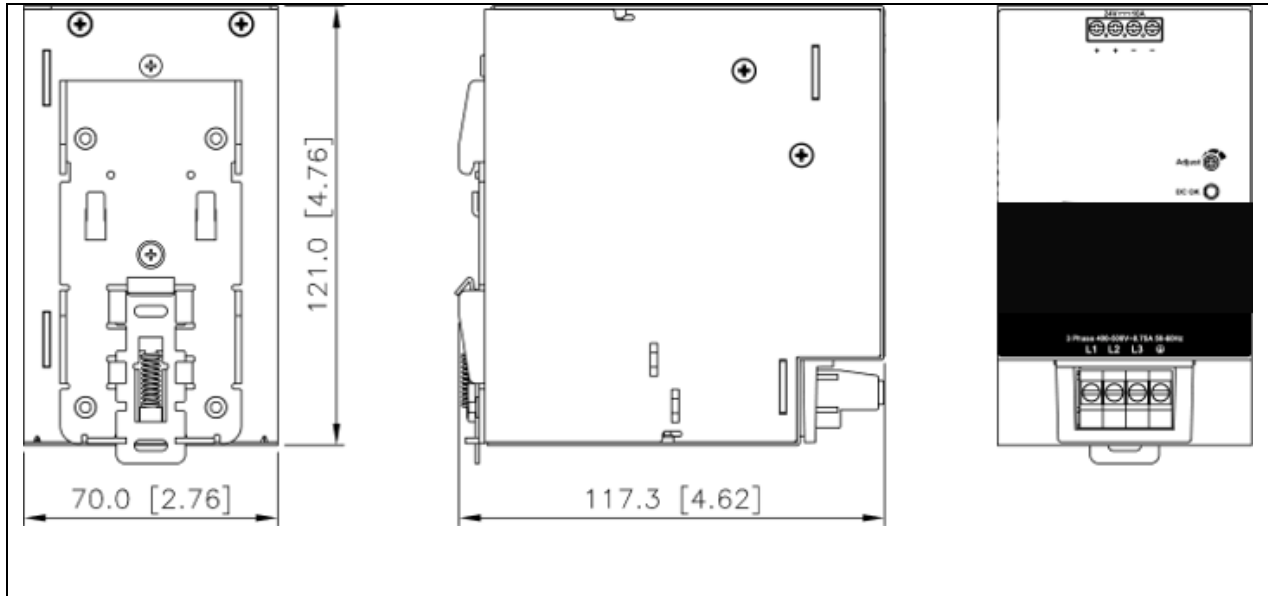
Block Diagram



Mechanical Data



- 1) Input terminal block connector
- 2) Output terminal block connector
- 3) DC Voltage adjustment potentiometer
- 4) DC OK control LED (Green)
- 5) Universal mounting rail system



Case Cover / Chassis	Aluminium
Dimensions (L x W x D)	121.0 x 70 x 117.3 mm
Unit Weight	0.89 kg
Indicator	green LED: DC OK
Cooling system	Convection
Terminal	Input 4 Pins (Rated 600 V / 35 A) Output 4 Pins (Rated 300 V / 28 A)
Wire	Input: AWG 18-12 Output: AWG 16-12
DIN Rail	Standard TS35 DIN-rail (after EN 60715)
Noise	Sound Pressure Level (SPL) < 40 dBA

