ADT240-xx Series

DESCRIPTIONS

240W, AC-DC DIN-Rail Power Supply



RoHS

Report Report

EN62368-1 BS EN62368-1

FEATURES

- Universal 320-600VAC or 450-850VDC input voltage
- Three-phase input (two or three phase are available)
- Operating ambient temperature range: -30℃ to +70℃ (60℃ full load)
- High I/O isolation voltage up to 4000VAC
- Low ripple & noise, high efficiency, 5000m altitude
- DC OK function
- 130% peak load for 3 seconds
- Output short circuit, over-current, over-voltage, over-temperature protection
- OVC III (designed to meet EN62477/2000m)
- Safety according to UL/IEC62368, EN62477, EN61558

APPLICATIONS

- Industrial control
- Electromechanical equipment
- Automation equipment

Selection Guide

Certification	Part No.	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range ADJ (V)	Efficiency at 400VAC (%) Typ.	Capacitive Load (μF) Max.
EN/BS EN	ADT240-24	240	24V/10A	24-28	92	10000
	ADT240-48	240	48V/5A	48-55	92	5000

Note:1.Use suffix "QQ" for both sides conformal coating;

2.The actual adjustment range may extend outside the values stated, care should be exercised to ensure that the output voltage and power levels remain within the published maximum values.

3.The product picture is for reference only.For details, please refer to the actual product.

Specifications

Specifications	Item		Operating Conditions		Min.	Typ.	Max.	Unit
Input Specifications	Input Voltage Range (three-phase input)		Rated input (certified voltage)		380	--	480	VAC
			AC input		320	--	600	
			DC input		450	--	850	VDC
	Input Frequency				47	--	63	Hz
	Input Current		400VAC		--	--	0.85	A
			500VAC		--	--	0.75	
	Inrush Current		400VAC	Cold start	--	50	60	
	Leakage Current		480VAC		<2mA/rms			
	Hot Plug				Unavailable			
Output Specifications	Output Voltage Accuracy		All load range		--	±1.0	--	%
	Line Regulation		Rated load		--	±0.5	--	
	Load Regulation		400VAC		--	±1.0	--	
	Ripple & Noise*		20MHz bandwidth (peak-to-peak value)	24V output	--	100	150	mV
				48V output	--	150	200	
	Stand-by Power Consumption				--	--	2	W
	Temperature Coefficient				--	±0.03	--	%/℃
	Short Circuit Protection				Enter hiccup mode after constant current operation for 3s (typ.), continuous, self-recovery			
	Over-current Protection				≥130% Io, enter hiccup mode after constant current operation for 3s (typ.), self-recovery			
	Over-voltage Protection		24V output		≤36V	Output voltage hiccup, self-recovery		
			48V output		≤65V			
	Over-temperature Protection		Over-temperature protection start		--	--	85	℃
			Over-temperature protection release		50	--	--	
	Minimum Load				0	--	--	%
	Start-up Time				--	--	1.5	s
	DC OK Signal**		Resistive load		30VDC/1A Max.			
	Hold-up Time		400VAC		10	20	--	ms
			500VAC		30	40	--	
General Specifications	Isolation	Input - output	Electric Strength Test for 1min., leakage current < 10mA		4000	--	--	VAC
		Input - ⏚	Electric Strength Test for 1min., leakage current < 15mA		2500	--	--	
		Output - ⏚			500	--	--	
		Output - DC OK			500	--	--	

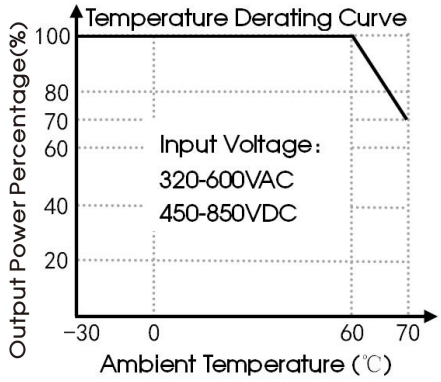
	Insulation Resistance	Input - output	500VDC	100	--	--	MΩ
		Input - ⏚					
		Output - ⏚					
	Operating Temperature			-30	--	+70	℃
	Storage Temperature			-40	--	+85	
	Storage Humidity			--	--	95	%RH
	Altitude			--	--	5000	m
	Power Derating	+60℃ to +70℃		3.0	--	--	%/℃
		320VAC - 340VAC	Three-phase input	1.0	--	--	%/VAC
		550VAC - 600VAC		0.4	--	--	
		320VAC - 340VAC	Two-phase input (80%Io)	1.0	--	--	
		550VAC - 600VAC		0.4	--	--	
	Safety Class			CLASS I			
	MTBF	MIL-HDBK-217F@25℃		> 300,000 h			
Mechanical Specifications	Case Material	Metal (AL1100, SGCC)					
	Package Dimensions	124.00 x 54.00 x 110.00 mm					
	Weight	750g (Typ.)					
	Cooling Method	Free air convection					

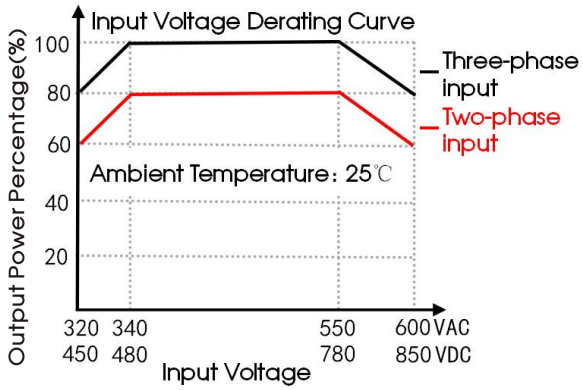
Note: 1.*The "Tip and barrel method" is used for ripple and noise test: Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor, please refer to Enclosed Switching Power Supply Application Notes for specific information;
2.**DC OK Signal: When the output voltage is normal, the relay is connected. When the output voltage is abnormal (<90%Vo), the relay is disconnected.

Electromagnetic Compatibility (EMC)

Electromagnetic Compatibility (EMC)	Emissions	CE	CISPR32 EN55032 CLASS B	
		RE	CISPR32 EN55032 CLASS B	
		Harmonic current	IEC/EN61000-3-2 CLASS A	
		Voltage flicker	IEC/EN61000-3-3	
	Immunity	ESD	IEC/EN61000-4-2 Contact ±8KV/Air ±15KV	Perf. Criteria A
		RS	IEC/EN61000-4-3 10V/m	Perf. Criteria A
		EFT	IEC/EN61000-4-4 ±2KV	Perf. Criteria A
		Surge	IEC/EN61000-4-5 Line to line ±2KV/line to ground ±4KV	Perf. Criteria A
		CS	IEC/EN61000-4-6 10Vr.m.s	Perf. Criteria A
		PFMF	IEC/EN61000-4-8 30A/m	Perf. Criteria B
		Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11 100% dip 1 periods, 30% dip 25 periods, 100% interruptions 250 periods	Perf. Criteria B

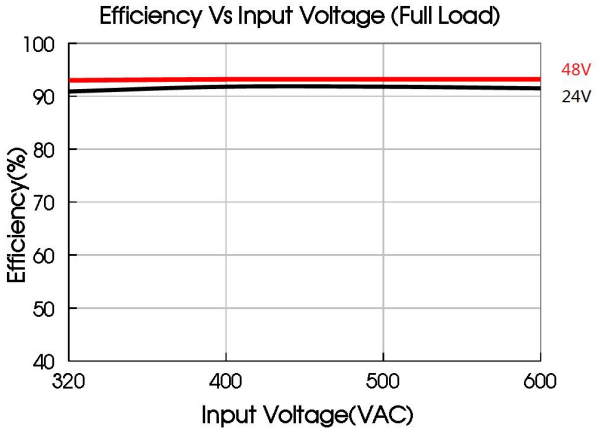
Product Characteristic Curve

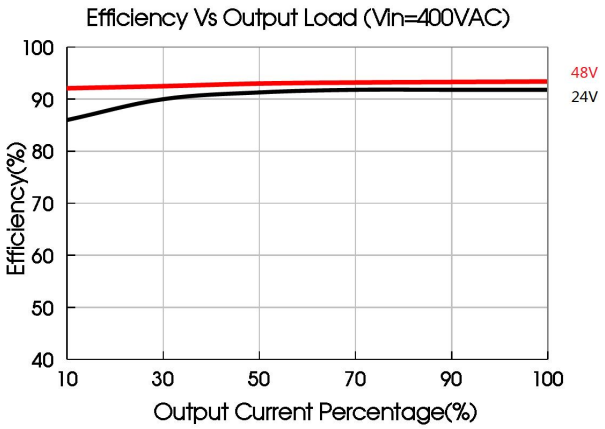




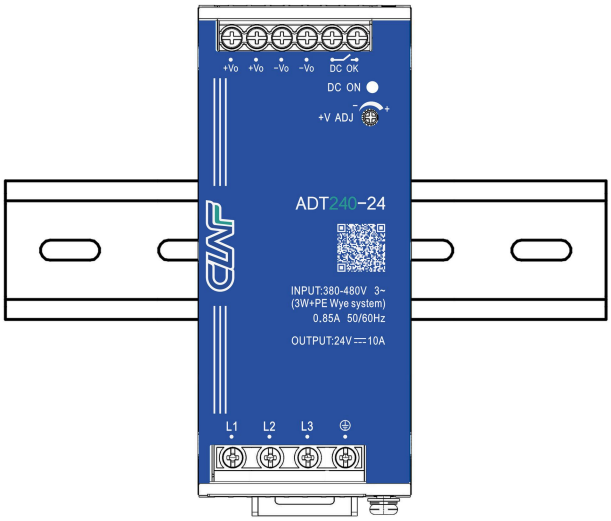
Note: ① With an AC input between 320-340VAC/550-600VAC and a DC input between 450-480VDC/780-850VDC, the output power must be derated as per temperature derating curves;

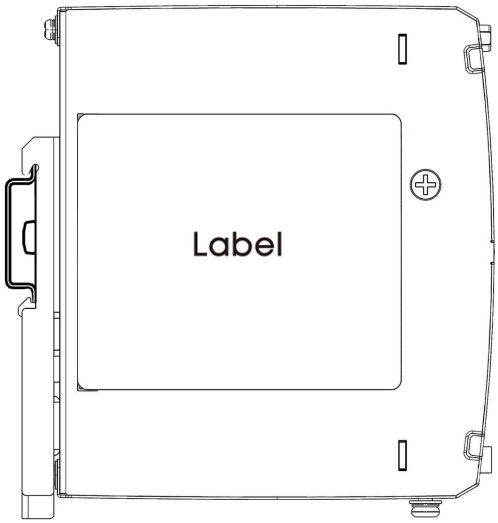
② This product is suitable for applications using natural air cooling.



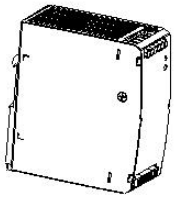


Installation Diagram

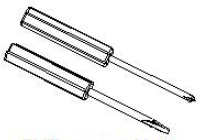




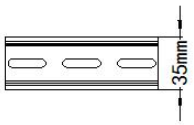
Bill Of Material		
1	Product	1 PCS
2	Phillips screwdriver Slotted screwdriver	1 PCS
3	TS35/7.5 or TS35/15	1 PCS
4	24–10AWG wires	/ PCS
	All above is only for reference, the actual wiring diameter and locking torque refer to the appearance size diagram	



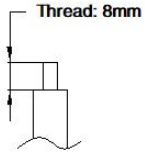
Product



Phillips screwdriver
Slotted screwdriver
Diameter of the cutting tools: 3mm

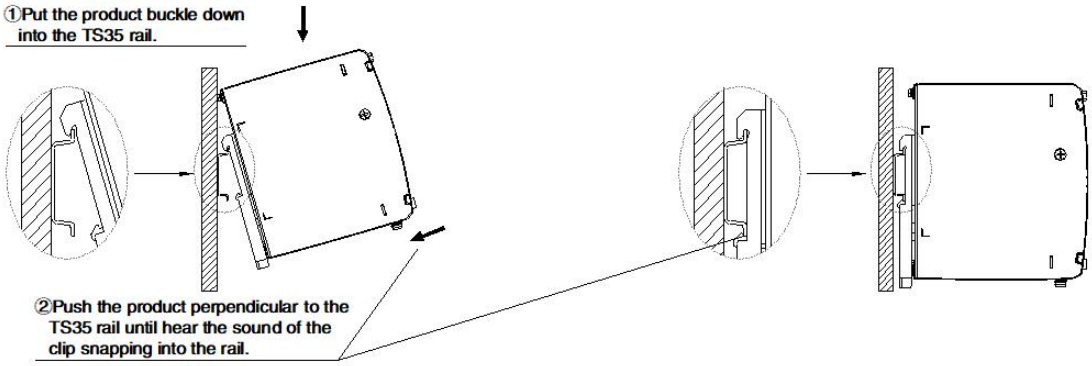


TS35/7.5 or TS35/15

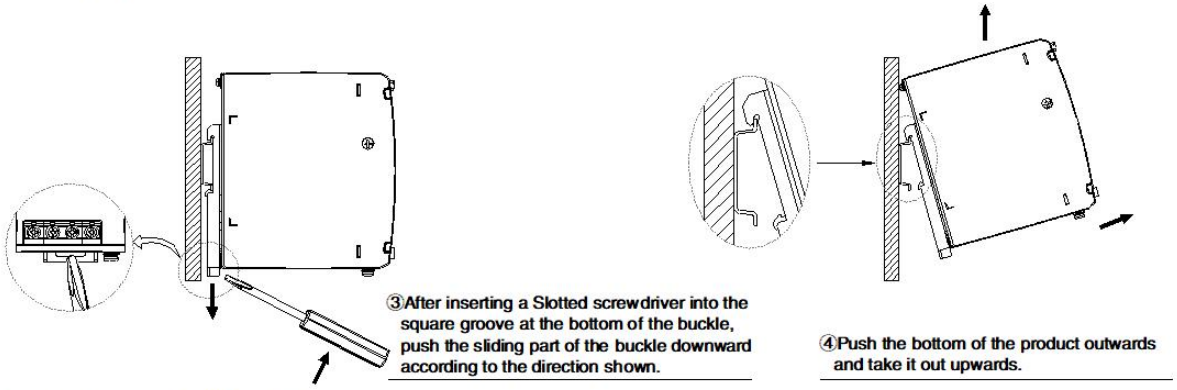


24–10AWG wires

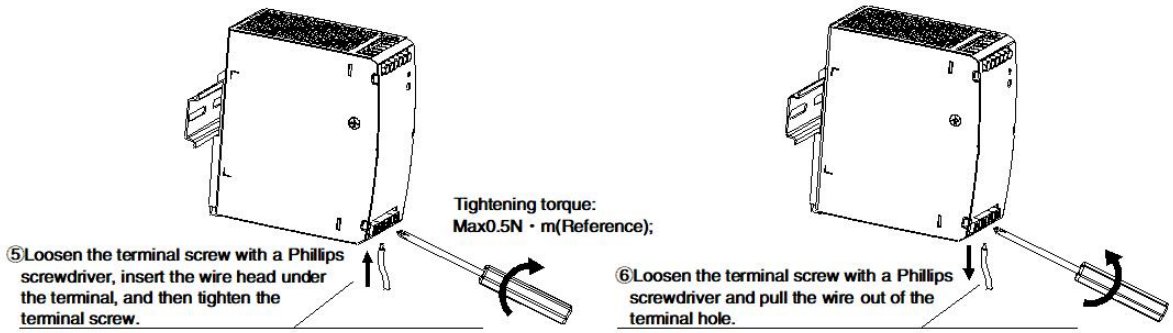
Installation steps ①–②



Disassembly steps ③–④

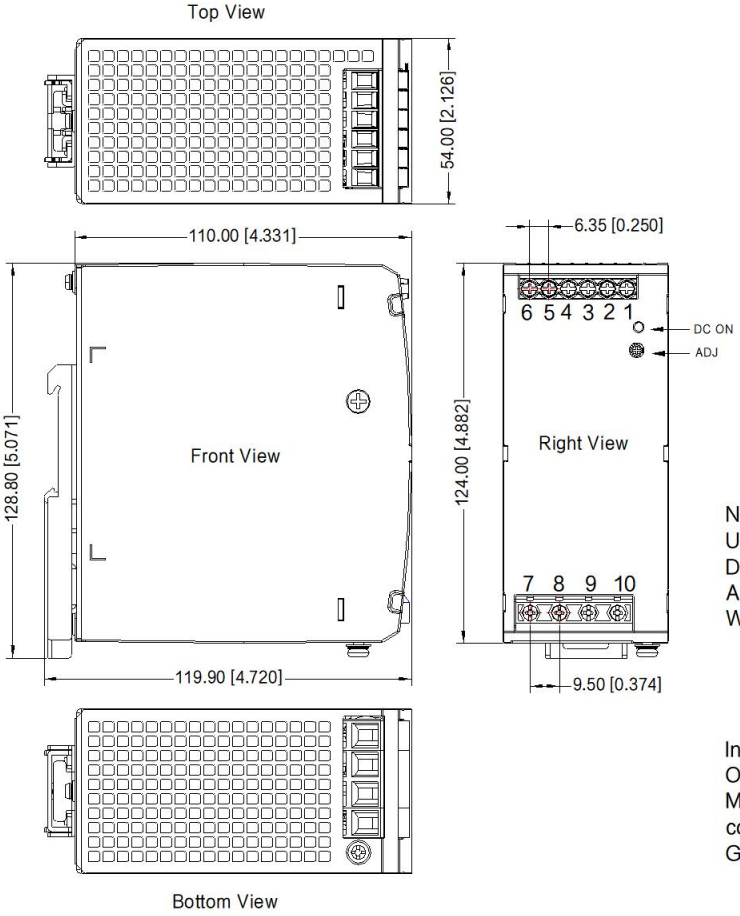


Connecting/Disconnecting Steps ⑤–⑥



Note: Keep the following installation clearances: 20mm on top, 20mm on the bottom, 5mm on the left and right sides are recommended when the device is loaded permanently with more than 50% of the rated power. Increase this clearance to 15mm in case the adjacent device is a heat source (e.g. another power supply).

Dimensions and Recommended Layout



THIRD ANGLE PROJECTION

Pin-Out	
Pin	Mark
1	DC OK
2	
3	-Vo
4	
5	+Vo
6	
7	AC(L1) or DC+
8	AC(L2) or DC-
9	AC(L3)
10	⏚

Note:
Unit: mm[inch]
DC ON： Output status indicator LED
ADJ: Output adjustable resistor
Wire range: Input: 24-10 AWG
(12-10AWG for pin10)
Output: 24V: 16-10AWG
48V: 18-10AWG
DC OK: 24-16AWG
Input Tightening torque: Max 1.0 N·m
Output Tightening torque: Max 0.5 N·m
Mounting rail: TS35, rail needs to connect safety ground
General tolerances: ± 1.00[± 0.039]

WARNING Risk of electrical shock, fire, personal injury or death:

AVERTISSEMENT AVERTISSEMENT Risque de choc électrique, d'incendie, de blessures corporelles ou de décès :

1. Do not use the power supply without proper grounding (Protective Earth). Use the terminal on the input block for earth connection and not one of the screws on the housing;
   N'utilisez pas l'alimentation électrique sans mise à la terre appropriée (Terre protectrice). Utilisez le terminal sur le bloc d'entrée pour la connexion terrestre et non pas une des vis sur le boîtier;
2. Turn power off before working on the device, protect against inadvertent re-powering;
   Éteignez l'alimentation avant de travailler sur l'appareil, protégez-vous contre la réénergisation accidentelle;
3. Make sure that the wiring is correct by following all local and national codes;
   Assurez-vous que le câblage est correct en suivant tous les codes locaux et nationaux;
4. Do not modify or repair the unit;
   Ne modifiez pas ou ne réparez pas l'appareil;
5. Do not open the unit as high voltages are present inside;
   Ne modifiez pas ou ne réparez pas l'appareil;
6. Use caution to prevent any foreign objects from entering the housing;
   Faire preuve de prudence pour empêcher les objets étrangers d'entrer dans le logement;
7. Do not use in wet locations or in areas where moisture or condensation can be expected;
   Faire preuve de prudence pour empêcher les objets étrangers d'entrer dans le logement;
8. Do not touch during power-on, and immediately after power-off, hot surfaces may cause burns;
   Ne touchez pas pendant l'alimentation et, immédiatement après l'alimentation, les surfaces chaudes peuvent causer des brûlures.
9. For ambient temperature ≤60℃, use ≥90℃ - copper wire only; for ambient temperature >60℃ to 85℃, use ≥105℃ - copper wire only; use only wires with a minimum dielectric strength of 300V (input) and 60V (output);
   Température ambiante ≤60℃, utiliser ≥90℃ - seulement fils de cuivre; Température ambiante >60℃ et 85℃, utiliser ≥105℃ - seulement fils de cuivre; Uniquement pour l'ulilisation de fils de cuivre d'une résisitance d'isolation minimale de 300V (d'entrée) et 60V (de sortie).

Note:

1. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<75%RH with nominal input voltage and rated output load;
2. The room temperature derating of 3.5℃/1000m is needed for operating altitude greater than 2000m;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. In order to improve the efficiency at high input voltage, there will be audible noise generated, but it does not affect product performance and reliability;
5. We can provide product customization service, please contact our technicians directly for specific information;
6. Products are related to laws and regulations: see "Features" and "EMC";
7. The out case needs to be connected to PE (⏚) of system when the terminal equipment in operating;
8. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.
9. The image certification marks are for reference only; please refer to the selection table for actual specifications. Certification is based on the physical mark or packaging label.