



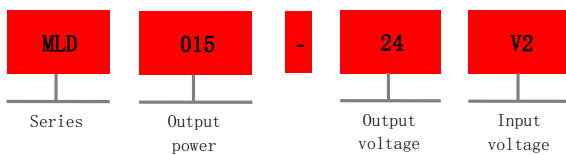
## ▲ Specification

ultra-thin width 17.5mm(1SU)  
Protection: Over Voltage/Over load/  
Short circuit/reverse polarity protection · input  
undervoltage protection  
-40~+85°C wide range working temperature  
capable of natural air cooling  
Output voltage (DC) adjustable ( $\pm 10\%$ )  
4:1 wide range input  
rail installation: TS-35/7.5 or 15  
no minimum load requirement  
4KVdc · input/output isolation · enhanced isolation ·  
3 years warranty

## ▲ Application

Industrial automation control system  
wireless network  
Telecommunication and data communication systems  
Electronic instruments and devices  
Factory automation  
semiconductor manufacturing equipment

## ▲ Model encoding





## Specification

Input					
Input voltage notel	9~36Vdc				
Input Current (Typ.)	0.8A/24Vdc				
Surge current (Typ.)	15A/24Vdc				
Output					
Model	MLD015-3.3V2	MLD015-05V2	MLD015-12V2	MLD015-15V2	MLD015-24V2
DC voltage (V)	3.3V	5V	12V	15V	24V
Efficiency (Typ.)	84%	84%	85%	85%	86%
Voltage adjustment range	3.0~3.6V	4.5~5.5V	9~13.2V	13.5~16.5V	21.6~28V
Rated current	3.5A	3A	1.25A	1A	0.63A
Current range	0~3.5A	0~3A	0~1.25A	0~1A	0~0.63A
Rated power	11.6W	15W	15W	15W	15W
Ripple & noise (max MVP-P)note2	50mVp-p	50mVp-p	60mVp-p	75mVp-p	100mVp-p
Voltage tolerance note3	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%
Line regulation	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
Load regulation	±1.5%	±1.0%	±0.5%	±0.5%	±0.5%
Setup, rise time	120ms, 85ms(at full load)				
Hold up time (Typ.)	type:8ms@24Vdc input				
External capacitive load (u	3300uF	3300uF	1200uF	1200uF	680uF
Status indicator	Green LED				
Protection					
Over load	110%~150% of the rated output power Protection mode: Hiccup mode, recover automatically after fault condition is removed				
Over voltage (V)	3.8~4.7V	5.75~7V	13.8~16.2V	17.25~20.25V	28.8~32.4V
Reverse polarity	Protection mode: Output shutdown, recoverable after power reset				
Undervoltage lockout	Automatically recovers through MOSFET after abnormal condition is removed, without damage Power ON≥9V , OFF≤8.5V				
Safety and EMC					
Withstand voltage	I/P-O/P:4KVdc				
Insulation resistance	I/P-O/P>100M Ohms/500Vdc/25℃/70% RH				
Safety standard	Reference UL 62368-1,IEC 62368-1,AS/NZS 62368.1				
EMC emission	Parameter		Standard		Test Level/Note
	Conducted		BS EN/EN55032		Class B
	Radiated		BS EN/EN55032		Class B
	Voltage Flicker		BS EN/EN61000-3-3		.....
EMC immunity	BS EN/EN55024 , BS EN/EN61000-6-2 (BS EN/EN50082-2)				
	Parameter		Standard		Test Level/Note
	ESD		BS EN/EN61000-4-2		Level 3,8KV air;Level 3,6KV contact;criteria A
	Radiated		BS EN/EN61000-4-3		Level 3,10V/m;criteria A
	EFT/Burst		BS EN/EN61000-4-4		Level 3,2KV;criteria A
	Surge		BS EN/EN61000-4-5		Level 3,1KV/Line-Line;criteria A
	Conducted		BS EN/EN61000-4-6		Level 3,10V;criteria A
Magnetic Field		BS EN/EN61000-4-8		Level 4,30A/m;criteria A	
Environment					
Working temperature	-40~+85℃ (Please refer to the "derating curve")				
Working humidity	5~95% RH, No condensation				
Storage temp./humidity	-40~+85℃, 5~95% RH, No condensation				
Temperature coefficient	±0.03%/℃ (0~60℃)				
Vibration resistance	Component:10~500Hz, 2G 10min/Circle 60min in each X,Y,Z direction				
Altitude	5000m				
Others					
MTBF	≥908K hrs,MIL-HDBK-217F (25℃)				
Weight	68g				
Dimension	17.5*90*54.5mm				



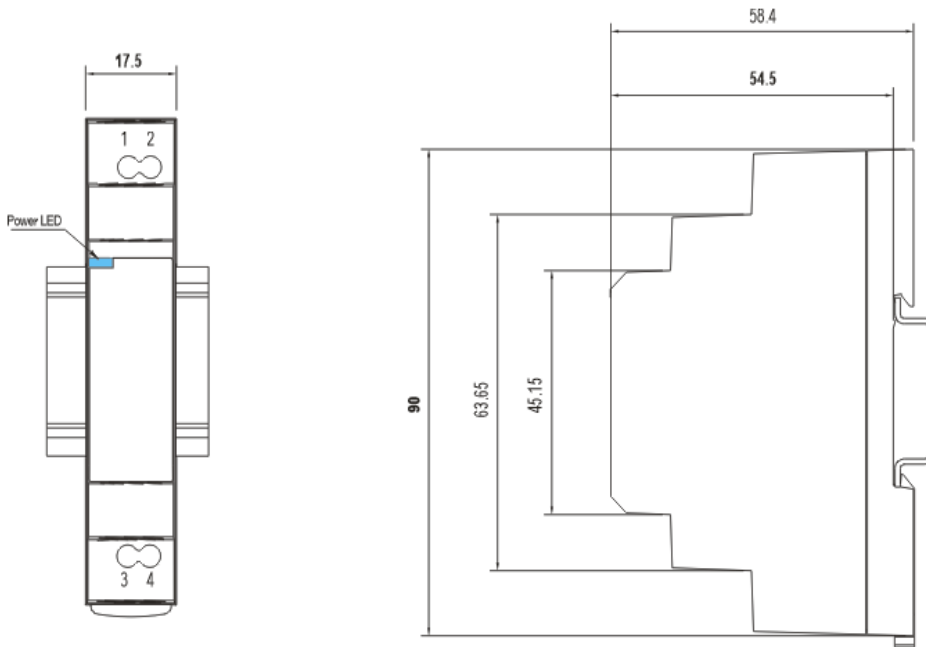
Data	Model	Rated output power	Output voltage current	Efficiency	maximum capacitive load at ambient temperature
	MLD015-3.3V2	11.6W	3.3V/3.5A	84%	3300uF
	MLD015-05V2	15W	5V/3A	84%	3300uF
	MLD015-12V2	15W	12V/1.25A	85%	1200uF
	MLD015-15V2	15W	15V/1A	85%	1200uF
	MLD015-24V2	15W	24V/0.63A	86%	680uF
Accessory	Description	Model			

### Electrical specifications

Input parameters					
Input voltage notel	18~75Vdc				
Input current (Typ.)	0.4A/48Vdc				
Surge current (Typ.)	15A/48Vdc				
Output parameters					
Model	MLD015-3.3V3	MLD015-05V3	MLD015-12V3	MLD015-15V3	MLD015-24V3
DC voltage	3.3V	5V	12V	15V	24V
Efficiency(Typ.)	84%	85%	86%	86%	87%
Voltage adjustment range	3.0~3.6V	4.5~5.5V	9~13.2V	13.5~16.5V	21.6~28V
Rated current	4.5A	3A	1.25A	1A	0.63A
Current range	0~4.5A	0~3A	0~1.25A	0~1A	0~0.63A
Rated power	15W	15W	15W	15W	15W
Ripple & noise(max MVP-P) note2	50mVp-p	50mVp-p	60mVp-p	75mVp-p	100mVp-p
Voltage tolerance note3	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%
Line regulation	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
Load regulation	±1.5%	±1.0%	±0.5%	±0.5%	±0.5%
Setup, rise time	120ms, 85ms(at full load)				
Hold up time (Typ.)	type:16ms@48Vdc input				
External capacitive load (uF)	3300uF	3300uF	1200uF	1200uF	680uF
Status indicator	Green LED				
Protection					
Over load	110%~150% of the rated output power Protection mode: Hiccup mode, recover automatically after fault condition is removed				
Over voltage	3.8~4.7V	5.75~7V	13.8~16.2V	17.25~20.25V	28.8~32.4V
	Protection mode: Output shutdown, recoverable after power reset				
Reverse polarity	Automatically recovers through MOSFET after abnormal condition is removed, without damage				
Undervoltage lockout	Power ON≥18V , OFF≤17V				
Safety and EMC					
Withstand voltage	I/P-O/P: 4KVdc				
Insulation resistance	I/P-O/P>100M Ohms/500Vdc/25°C/70% RH				
Safety standard	Reference UL 62368-1, IEC 62368-1, AS/NZS 62368.1				
EMC emission	<b>Parameter</b>	<b>Standard</b>		<b>Test Level/Note</b>	
	Conducted	BS EN/EN55032		Class B	
	Radiated	BS EN/EN55032		Class B	
	Voltage Flicker	BS EN/EN61000-3-3		.....	
EMC immunity	BS EN/EN55024 , BS EN/EN61000-6-2 (BS EN/EN50082-2)				
	<b>Parameter</b>	<b>Standard</b>		<b>Test Level/Note</b>	
	ESD	BS EN/EN61000-4-2		Level 3,8KV air;Level 3,6KV contact;criteria A	
	Radiated	BS EN/EN61000-4-3		Level 3,10V/m;criteria A	
	EFT/Burst	BS EN/EN61000-4-4		Level 3,2KV;criteria A	
	Surge	BS EN/EN61000-4-5		Level 3,1KV/Line-Line;criteria A	
	Conducted	BS EN/EN61000-4-6		Level 3,10V;criteria A	
Magnetic Field	BS EN/EN61000-4-8		Level 4,30A/m;criteria A		
Environment					
Working temperature	-40~+85°C (Please refer to the "derating curve)				
Working humidity	5~95% RH, No condensation				
Storage temp./humidity	-40~+85°C, 5~95% RH, No condensation				
Temperature coefficient	±0.03%/°C (0~60°C)				
Vibration resistance	Component:10~500Hz, 2G 10min/Circle 60min in each X,Y,Z direction;				
Altitude	2000m				

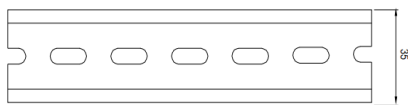
Others					
MTBF	≥907K hrs, MIL-HDBK-217F (25°C)				
Weight	68g				
Dimension	17.5*90*54.5mm				
Data	Model	Rated output power	Output voltage current	Efficiency	maximum capacitive load at ambient temperature
	MLD015-3.3V3	15W	3.3V/4.5A	84%	3300uF
	MLD015-05V3	15W	5V/3A	85%	3300uF
	MLD015-12V3	15W	12V/1.25A	86%	1200uF
	MLD015-15V3	15W	15V/1A	86%	1200uF
	MLD015-24V3	15W	24V/0.63A	87%	680uF
Accessory	Description	Model			

## Installation instruction



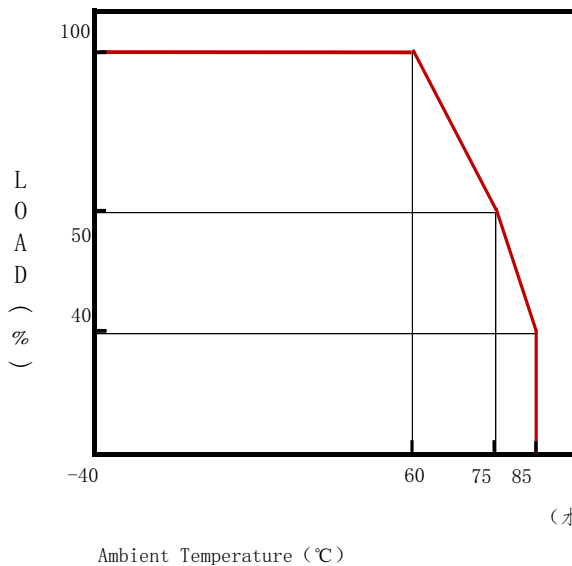
Terminal Pin Numbering

Pin Numbering	Function
1	DC Output +Vo
2	DC Output -Vo
3	DC Input -Vin
4	DC Input +Vin

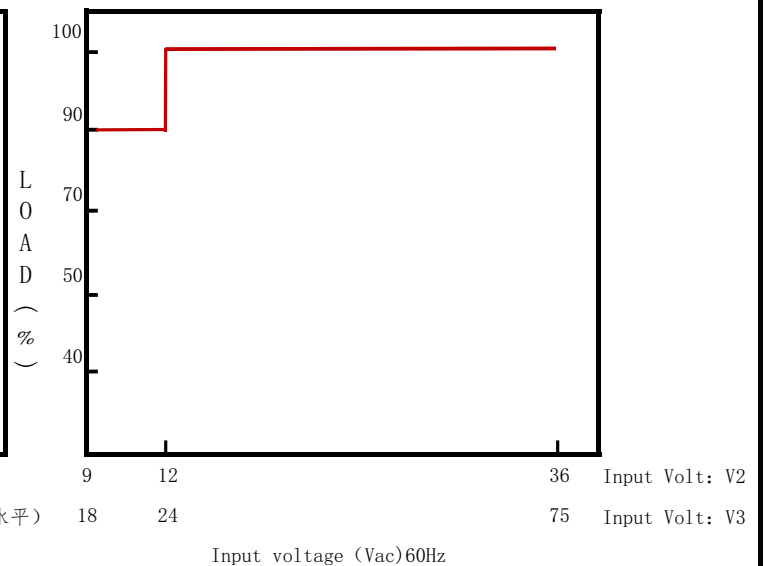


安装轨道: TS35/7.5 或 TS35/15

Derating Curve



Derating vs Input Voltage Curve



**Note:** 1:Under low input voltage conditions, output derating is required. Please refer to the derating curve for specifics.  
2:Ripple & noise are measured at 20MHZ of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor  
3:Tolerance: includes set up tolerance, line regulation and load regulation.  
4:Unless otherwise specified, all specifications are tested at an input of V2: 24Vdc; V3: 48Vdc, rated load, and 25° C ambient temperature.  
5:When operating at an altitude higher than 2000 meters (6500 feet), the ambient temperature for fanless models decreases by 3.5° C per 1000 meters, and for models with fans, it decreases by 5° C per 1000 meters.

