



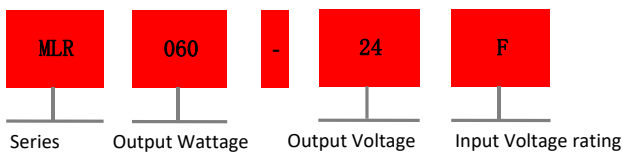
### ▲ Features

- Ultra slim design with 52.5mm(3SU) width
- Pass LPS(Limited power source)
- No load power consumption < 0.3W
- DIN rail TS-35/7.5 or15 mountable
- Full range AC input 85~264VAC(277VAC operational)
- DC output voltage adjustable
- Isolation Class II
- Cooling by free air convection(Operation Temp. : -30~+70°C)
- LED indicator for power ON
- Protections : Short circuit/Over load/Over voltage
- 3 years warranty

### ▲ Applications

- Building automation
- Household control system
- Industrial control system
- Factory automation
- Electro-mechanical equipment

### ▲ Model encoding

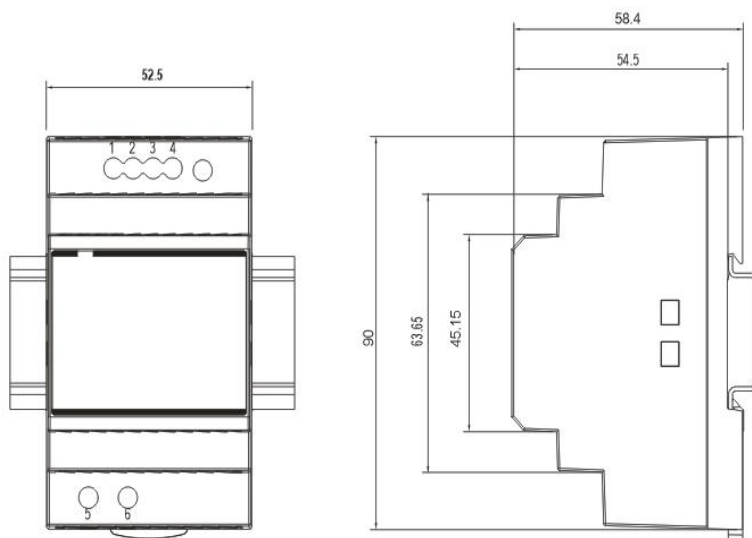


## Specification

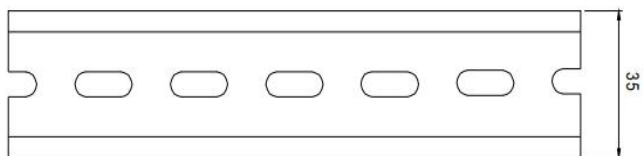
Input					
Input voltage range	85 ~ 264VAC(277VAC operational) 120 ~ 370VDC(390VDC Operational)				
Frequency range	47 ~ 63Hz				
AC current(Typ.)	1.2A/115VAC 0.8A/230VAC				
Inrush current (Typ.)	Cold start 30A/115VAC 60A/230VAC				
Output					
Model	MLR060-05F	MLR060-12F	MLR060-15F	MLR060-24F	MLR060-48F
Output Voltage	5V	12V	15V	24V	48V
Efficiency(Typ.)	85.0%	88%	89%	90%	91%
Voltage ADJ range	5.0 ~ 5.5V	10.8 ~ 13.8V	13.5 ~ 18V	21.6 ~ 29V	43.2 ~ 55.2V
Rated current	6.5A	4.5A	4A	2.5A	1.25A
Current range	0 ~ 6.5A	0 ~ 4.5A	0 ~ 4A	0 ~ 2.5A	0 ~ 1.25A
Rated power	32.5W	54W	60W	60W	60W
Ripple & Noise(Max)*2	80mVp-p	120mVp-p	120mVp-p	150mVp-p	240mVp-p
Voltage tolerance *3	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%
Line Regulation	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
Load Regulation	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
Setup, Rise time	500ms,50ms/230VAC 500ms,50ms/115VAC(Full load)				
Holdup time (Typ.)	30ms/230VAC 12ms/115VAC(Full load)				
Indicator	Green LED				
Protection					
Over Load	105% ~ 160% of rated output power				
	Hiccup mode when output voltage < 50%, recovers automatically after fault condition is removed				
	Constant current limiting when output voltage between 50% ~ 100%, recovers automatically after fault condition is removed				
Over Voltage	5.75 ~ 6.75V	14.2 ~ 16.2V	18.8 ~ 22.5V	30 ~ 36V	56.5 ~ 64.8V
	Shut down output voltage, re-power on to recover				
Safety standards					
Withstand Voltage	I/P-O/P:4KVAC				
Isolation resistance	I/P-O/P:100M Ohms/500VDC/25°C/70% RH				
Safety standards	Design refer to EN IEC 62368-1、GB4943.1				
EMC Emission	Parameter	Standard			Test Level/Note
	Conducted	EN 55032			Class B
	Radiated	EN 55032			Class B
	Voltage Flicker	EN 61000-3-3			设计参考Class A
EMC Immunity	Harmonic Current	EN IEC 61000-3-2			设计参考Class A
	Parameter	Standard			Test Level/Note
	ESD	EN61000-4-2			Level 3 8KV air;criteria A
	Radiated Susceptibility	EN61000-4-3			Level 2 3V/m;criteria A
	EFT/Burest	EN61000-4-4			Level 3 2KV;criteria A
	Surge	EN61000-4-5			Level 3 2KV/L-N;criteria A
	Conducted	EN61000-4-6			Level 2 3V/m;criteria A
Magnetic Field	EN61000-4-8			Level 2 3A/m;criteria A	
Voltage Dips and interruptions	EN 61000-4-11			> 95% dip 0.5 periods, 30% dip 25 periods, > 95% interruptions 250 periods	
Environment					
Operating Temp.	-30 ~ +70°C(Refer to "Derating Curve")				
Operating Humidity	20 ~ 90% RH,non-condensing				
Storage Temp. & Humidity	-40 ~ +85°C,10 ~ 95% RH,non-condensing				
Temp. coefficient	±0.03%/°C (0 ~ 50°C)				
Vibration	10 ~ 500Hz, 2G 10 min/1 cycle, period for 60 min. each along X, Y, Z axes;Mounting: Compliance to IEC60068-2-6				
Operating Altitude	2000m (Note4)				
Over Voltage Category	III;According to EN61558, EN50178,EN60664-1, EN62477-1;Altitude up to 2000m				

Others					
MTBF	≥927.6K hrs,MIL-HDBK-217F(25°C)				
Weight	190g				
Dimension	52.5*90*54.5mm(W*H*D)				
Ordering	Model	Output power	Output Voltage/current	Efficiency	Max. Capacitive Load
	MLR060-05F	32.5W	5V/6.5A	85%	6800uF
	MLR060-12F	54W	12V/4.5A	88%	4700uF
	MLR060-15F	60W	15V/4A	89%	3300uF
	MLR060-24F	60W	24V/2.5A	90%	2200uF
	MLR060-48F	60W	48V/1.25A	91%	2000uF
Accessory	Parameter	model			

## Installation instruction



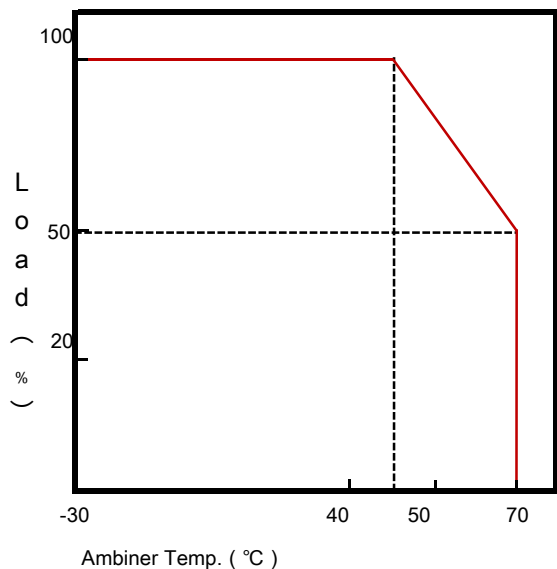
ADMISSIBLE DIN-RAIL: TS35/7.5 OR TS35/15



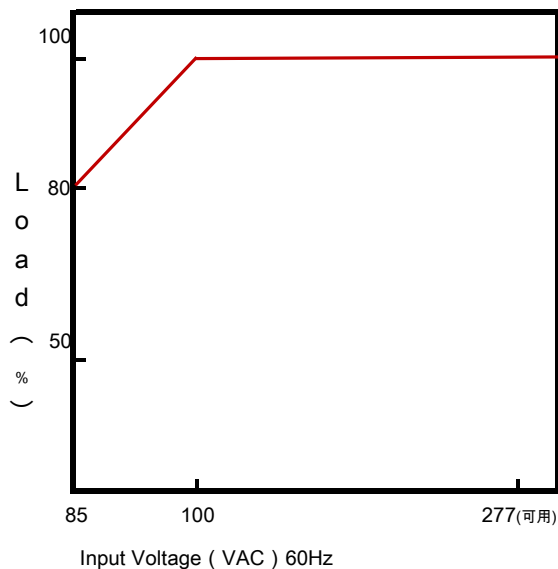
Terminal Pin No. assignment

Pin No.	Assignment	Pin No.	Assignment
1,2	-V	5	AC/L
3,4	+V	6	AC/N

## Derating Curve



## Output Derating VS Input Voltage



- Note:**
- 1: All paramets are measured at 230VAC input, rated load at 25°C of ambient temp. if not special mentioned
  - 2: Ripple & Noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μf & 47uf parallel capacitor
  - 3: Tolerance: includes set up tolerance, line regulation and load regulation
  - 4: The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft.)