IFS 48VDC DIN Rail Power Supply User Manual

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Manufacturer

Interlogix

3211 Progress Drive, Lincolnton, NC 28092 USA

Authorized EU manufacturing representative:
UTC Climate Controls & Security B.V.,
Kelvinstraat 7, 6003 DH Weert, Netherlands

Intended use

Use this product only for the purpose it was designed for; refer to the data sheet and user documentation for details. For the latest product information, contact your local supplier or visit us online at www.interlogix.com.

Certification

CE N4131

FCC compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

You are cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

ACMA compliance

Notice! This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Canada

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme á la norme NMB-003du Canada.

European Union directives

2004/108/EC (EMC Directive): Hereby, UTC Climate Controls & Security Corporation, Inc. declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 2004/108/EC.

Contact Information

For contact information, see www.interlogix.com or www.utcfssecurityproducts.eu.

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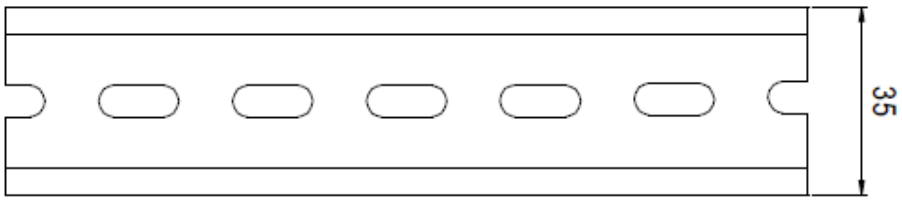
Introduction

Din Rail Features:

- 48VDC Din-Rail power supplies, AC Input 100~240V AC - 50/60Hz.
- High efficiency and Low power dissipation
- Built-in active PFC function, PF>0.93
- Over load protections: Short Circuit/Overload/Over Voltage/ Over temperature
- Cooling by Free Air convection
- Can be installed on DIN Rail TS-35/7.5 or 35/15
- UL 508 (industrial control equipment) approved
- EN61000-6-2 (EN50082-2) industrial immunity level
- Built-in DC OK Relay contact
- 100% full load burn-in tested
- 2 year warranty

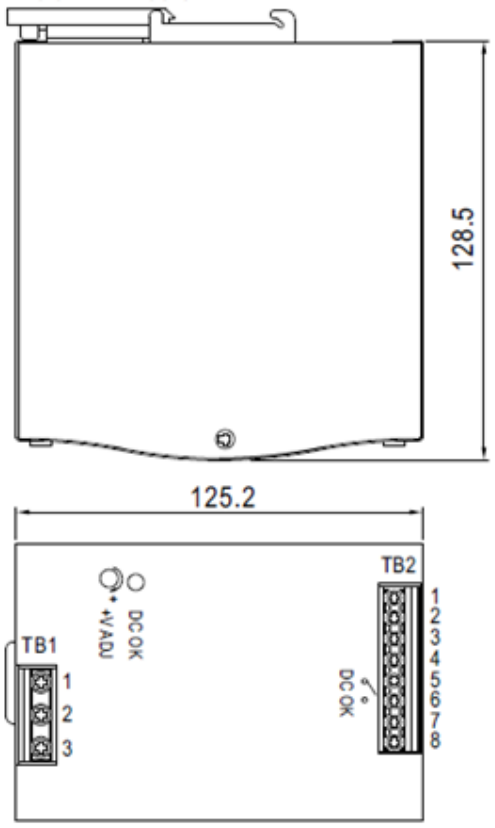
Installation:

Din-Rail supplies can be mounted on admissible DIN-RAIL TS35/7.5 or TS35/15



PS48VDC480W-DIN

Clip power supply on to Din-Rail



Attach wiring 14 AWG on to proper connections
See terminal assignments below:

Terminal Pin No. Assignment (TB1)

Pin No.	Assignment
1	FG ⏚
2	AC/N
3	AC/L

Terminal Pin No. Assignment (TB2)

Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V
5,6	Relay Contact
7,8	NC

■ Features :

- High efficiency 94% and low power dissipation
- 150% peak load capability
- Built-in active PFC function, PF>0.94
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- Built-in constant current limiting circuit
- Can be installed on DIN rail TS-35/7.5 or 15
- UL 508(industrial control equipment)approved
- EN61000-6-2(EN50082-2) industrial immunity level
- Built-in DC OK relay contact
- 100% full load burn-in test
- 2 Year Warranty

■ DC OK Relay Contact

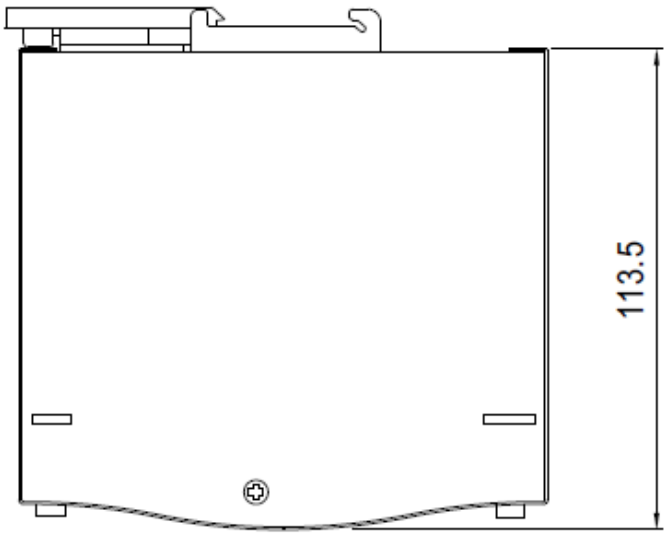
Contact Close	PSU turns on / DC OK.
Contact Open	PSU turns off / DC Fail.
Contact Ratings (max.)	30V/1A resistive load.

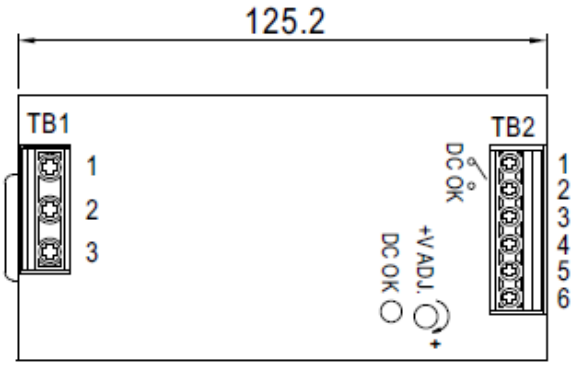
PS48VDC480W-DIN

OUTPUT	DC VOLTAGE	48V
	RATED CURRENT	10A
	CURRENT RANGE	0 ~ 10A
	RATED POWER	480W
	PEAK CURRENT	15A
	PEAK POWER Note.6	
	RIPPLE & NOISE (max.) Note.2	120mVp-p
	VOLTAGE ADJ. RANGE	48 ~ 55V
	VOLTAGE TOLERANCE Note.3	±1.0%
	LINE REGULATION	±0.5%
	LOAD REGULATION	±1.0%
	SETUP, RISE TIME	1500ms, 150ms/230VAC 3000ms, 150ms/115VAC at full load
	HOLD UP TIME (Typ.)	14ms/230VAC at full load
INPUT	VOLTAGE RANGE Note.7	90 ~ 264VAC 127 ~ 370VDC
	FREQUENCY RANGE	47 ~ 63Hz
	POWER FACTOR (Typ.)	0.94/230VAC 0.99/115VAC at full load
	EFFICIENCY (Typ.)	94%
	AC CURRENT (Typ.)	5A/115VAC 2.5A/230VAC
	INRUSH CURRENT (Typ.)	40A/115VAC 80A/230VAC
	LEAKAGE CURRENT	<0.8mA / 240VAC
PROTECTION	OVERLOAD	Normally works within 110 ~ 150% rated output power for more than 3 seconds and then shut down o/p voltage with auto-recovery
		>150% rated power, constant current limiting with auto-recovery within 2 seconds and may cause to shut down if over 2 seconds
	OVER VOLTAGE	56 ~ 65V
		Protection type : Shut down o/p voltage with auto-recovery or re-power on to recovery
	OVER TEMPERATURE	105℃±5℃ (TSW : detect on heatsink of power switch)
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down
FUNCTION	DC OK REALY CONTACT RATINGS (max.)	60Vdc/0.3A, 30Vdc/1A, 30Vac/0.5A resistive load
ENVIRONMENT	WORKING TEMP. Note.5	-25 ~ +70℃ (Refer to "Derating Curve")
	WORKING HUMIDITY	20 ~ 95% RH non-condensing
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)
	VIBRATION	Component:10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL508, TUV EN60950-1 approved
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC O/P-DC OK:0.5KVAC
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:>100M Ohms / 500VDC / 25℃/ 70% RH
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-2 (EN50082-2), EN61204-3, heavy industry level, criteria A, SEMI F47, GL approved
OTHERS	MTBF	112.9Khrs min. MIL-HDBK-217F (25℃)
	DIMENSION	85.5*125.2*128.5mm (W*H*D)
	PACKING	1.6Kg; 8pcs/13.8Kg/0.9CUFT
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 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. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. 5. Installation clearances : 40mm on top, 20mm on the bottom, 5mm on the left and right side are recommended when loaded permanently with full power. In case the adjacent device is a heat source, 15mm clearance is recommended. 6. 3 seconds peak power max. and the average output power should not exceed the rate power. 7. Derating may be needed under low input voltage. Please check the derating curve for more details.	

PS48VDC240W-DIN

Clip power supply on to Din-Rail





Attach wiring 14 AWG on to proper connections
See terminal assignments below:

Terminal Pin No. Assignment (TB1)

Pin No.	Assignment
1	FG ⏚
2	AC/N
3	AC/L

Terminal Pin No. Assignment (TB2)

Pin No.	Assignment
1,2	Relay Contact
3,4	DC OUTPUT +V
5,6	DC OUTPUT -V

■ Features :

- High efficiency 94% and low power dissipation
- 150% peak load capability
- Built-in active PFC function, PF>0.93
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- UL 508 (industrial control equipment) approved
- EN61000-6-2(EN50082-2) industrial immunity level
- Built-in DC OK relay contact
- 100% full load burn-in test
- 2 Year Warranty

■ DC OK Relay Contact

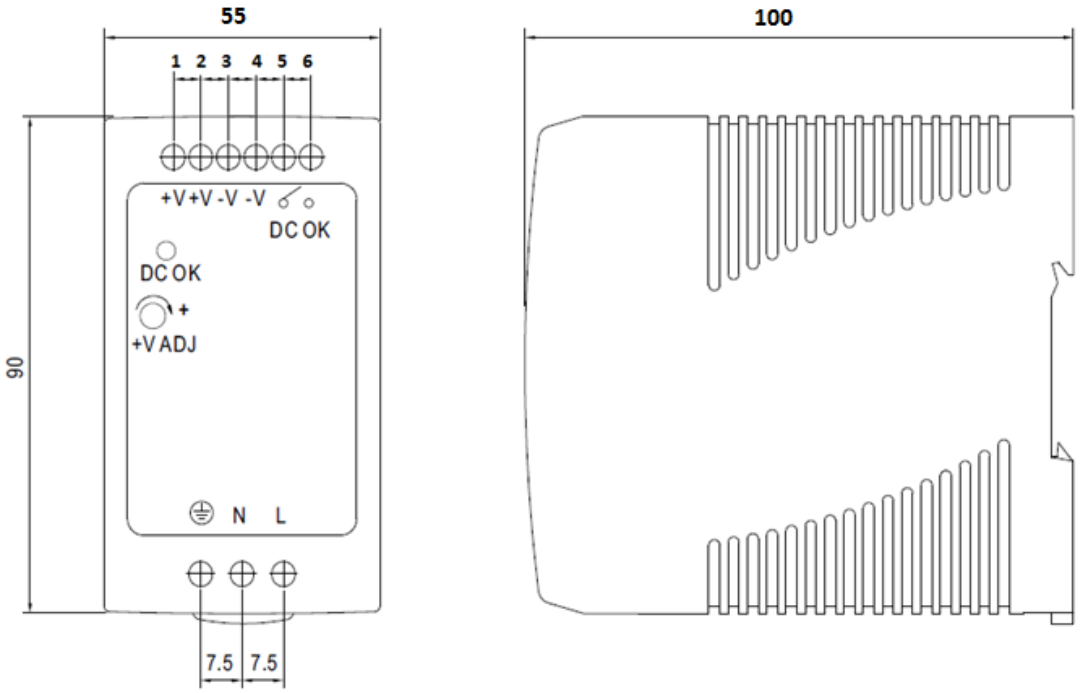
Contact Close	PSU turns on / DC OK.
Contact Open	PSU turns off / DC Fail.
Contact Ratings (max.)	30V/1A resistive load.

PS48VDC240W-DIN	
Output	
DC Voltage	48V
Rated Current	5A
Current Range	0~5A
Rated Power	240W
Peak Current	7.5A
Peak Power[6]	360W @ 3 sec. max. (refer to Derating Curve)
Ripple & Noise (max.)[2]	120mVp-p
Voltage Adj. Range	48~55V
Voltage Tolerance[3]	±1.0%
Line Regulation	±0.5%
Load Regulation	±1.0%
Setup, Rise Time	1500ms, 60ms/230VAC 3000ms, 60ms/115VAC at full load
Hold up Time (typ.)	20ms/230VAC 20ms/115VAC at full load
Input	
Voltage Range	88 ~ 264VAC / 124 ~ 370VDC
Frequency Range	47 ~ 63Hz
Power Factor (typ.)	0.93/230VAC/0.99 / 115VAC at full load
Efficiency Input (typ.)[8]	94%
AC Current (typ.)[5]	2.6A/115VAC / 1.3A/230VAC
Inrush Current (typ.)	33A/115VAC / 65A/230VAC
Leakage Current	<1mA/240VAC
Protection	
Overload	Normally works within 110 - 150% rated output for more than 3 seconds and then shut down o/p voltage with auto-recovery
	>150% rated power, constant current limiting with auto-recovery within 2 seconds and may cause to shut down if over 2 seconds
Over Voltage	29 ~ 33V
	Protection type: Shut down O/P voltage with auto-recovery
Over Temperature	95°C ±5°C (TSW: detect on heatsink of power switch)
	Protection type: Shut down O/P voltage, recovers automatically after temperature goes down
Function	
DC OK Relay Contact Ratings (max.)	60VDC/0.3A, 30VDC/1A, 30VAC/0.5A resistive load
Environment	
Working Temperature[5]	-25 ~ +70°C (Refer to Derating Curve)
Working Humidity	20 ~ 95% RH non-condensing
Storage Temp., Humidity	-40 ~ +85°C, 10 ~ 95% RH
Temp. Coefficient	±0.03%/°C (0 ~ 50°C)
Vibration	Component: 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes: Mounting: Compliance to IEC60068-2-6
Safety & EMC[4]	
Safety Standards	UL508, TUV EN60950-1 approved
Withstand Voltage	I/P-OP:3KVAC, I/P-FG:1.5KVAC, O/P-FG:0.5KVAC, O/P-DC OK:0.5KVAC
Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG:>100M Ohms / 500VDC / 25°C/70% RH
EMC Emission	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3
EMC Immunity	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-2 (EN500082-2), EN61204-3, Heavy industry level, Criteria A, SEMI F47, GL approved
Others	
MTBF	169.3Khrs min. MIL-HDBK-217° F (25°C)
Dimensions (W x H x D)	63 x 125.2 x 113.5mm
Packing	1.03Kg; 12pcs/13.4Kg/1.06 cu. ft.

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
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. The power supply is considered as a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.
5. Installation clearances: 40mm on top, 20mm on the bottom, 5mm on the left and right side are recommended when loaded permanently with full power. In case the adjacent device is a heat source, 15mm clearance is recommended.
6. 3 seconds max., please refer to peak loading curves.
7. Derating may be needed under low input voltage. Please check the derating curve for more details.
8. After 30 minutes of burn-in.

PS48VDC100W-DIN

Clip power supply on to Din-Rail



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See terminal assignments below:

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Pin No.	Assignment
1	FG ⏚
2	AC/N
3	AC/L

Terminal Pin No. Assignment (TB2)

Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V
5,6	Relay Contact

■ DC OK Relay Contact

Contact Close	PSU turns on / DC OK.
Contact Open	PSU turns off / DC Fail.
Contact Ratings (max.)	30V/1A resistive load.

■ Features :

- Universal AC input / Full range
- Protections: Short circuit / Overload / Over voltage / Over temperature
- ZCS/ZVS technology to reduce power dissipation
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- DC OK relay contact
- No load power consumption<1W
- LED indicator for power on
- 100% full load burn-in test
- 2 Year Warranty

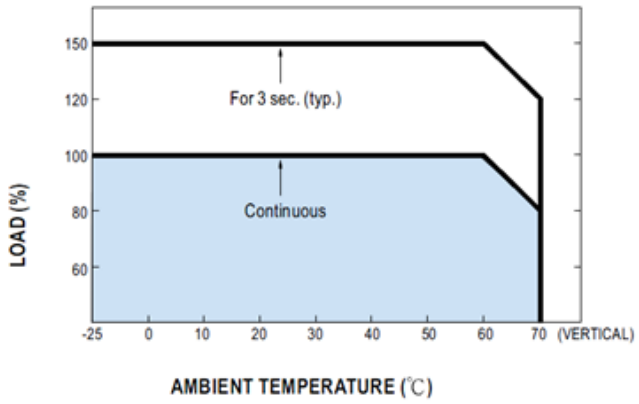
PS48VDC100W-DIN	
Output	
DC Voltage	48V
Rated Current	2A
Current Range	0~2A
Rated Power	96W
Ripple & Noise (max.)[2]	200mVp-p
Voltage Adj. Range	48~56V
Voltage Tolerance[3]	±1.0%
Line Regulation	±1.0%
Load Regulation	±1.0%
Setup, Rise Time[5]	3000ms, 50ms/230VAC 3000ms, 50ms/115VAC at full load
Hold up Time (typ.)	50ms/230VAC, 20ms/115VAC at full load
Input	
Voltage Range[6]	85 ~ 264VAC / 120 ~ 370VDC
Frequency Range	47 ~ 63Hz
Power Factor (typ.)	PF≥0.5/230VAC, PF≥.095/115VAC at full load
Efficiency (typ.)	88%
AC Current (typ.)	1.3A/115VAC / 0.8A/230VAC
Inrush Current (typ.)	Cold Start 30A/115VAC / 60A/230VAC
Leakage Current	<1mA/240VAC
Protection	
Overload	105 - 150% rated output power
	Protection type: Constant current limiting, recovers automatically after fault condition is removed
Over Voltage	57.6 ~ 64.8V
	Protection type: Shut down O/P voltage, re-power on to recover
Over Temperature	90°C ±10°C (RTH2: detect on heatsink of power transistor
	Protection type: Shut down O/P voltage, repower on to recover
Function	
DC OK Signal	Relay contact rating (max.): 30V/1A resistive
Environment	
Working Temperature	-10 ~ +60°C (Refer to Derating Curve)
Working Humidity	20 ~ 90% RH non-condensing
Storage Temp., Humidity	-40 ~ +85°C, 10 ~ 95% RH
Temp. Coefficient	±0.03%/°C (0 ~ 50°C)
Vibration	Component: 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes: Mounting: Compliance to IEC60068-2-6
Safety & EMC[4]	
Safety Standards	UL508, TUV EN60950-1 approved
Withstand Voltage	I/P-OP:3KVAC, I/P-FG:1.5KVAC, O/P-FG:0.5KVAC,
Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG:>100M Ohms / 500VDC / 25°C/70% RH
EMC Emission	Compliance to EN55011, EN55022 (CISPR22), EN61204-3 Class B, EN61000-3-2,-3
EMC Immunity	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-2, EN61204-3, Heavy industry level, Criteria A
Others	
MTBF	346Khrs min. MIL-HDBK-217° F (25°C)
Dimensions (W x H x D)	55 x 90 x 100mm
Packing	0.42Kg; 30pcs/13.6Kg/0.82 cu. ft.

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
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. The power supply is considered as a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.
5. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time.
6. Derating may be needed under low input voltage. Please check the derating curve for more details.

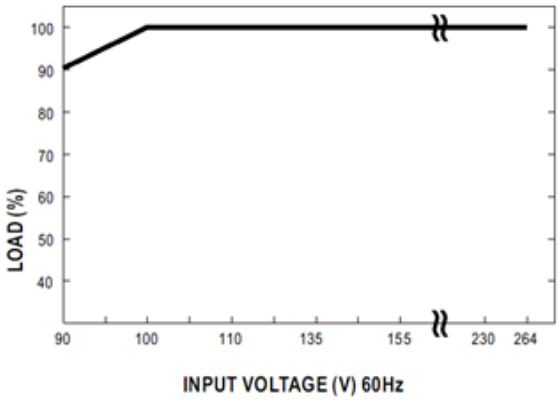
TYPICAL LOAD and Derating Curves

■ Derating Curve

PS48VDC480W-DIN
PS48VDC240W-DIN

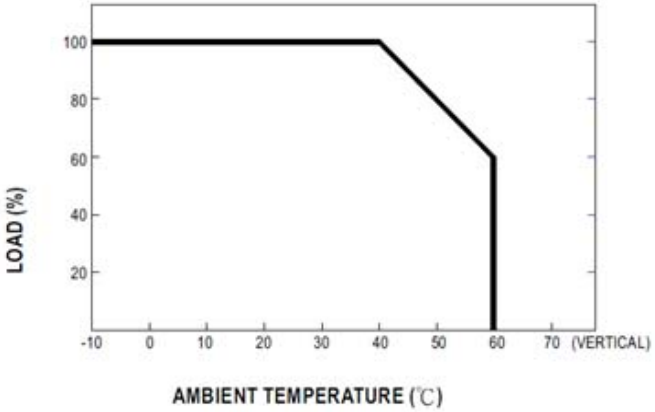


■ Output derating VS input voltage



■ Derating Curve

PS48VDC100W-DIN



■ Output Derating VS Input Voltage