



POWER SUPPLY

- AC 100-240V Wide-range Input
- Width only 32mm
- NEC Class 2 Compliant
- Efficiency up to 89.8%
- Full Power Between -25°C and +60°C
- 3 Year Warranty

GENERAL DESCRIPTION

The DIMENSION C-Line units are cost optimized power supplies without compromising quality, reliability and performance. The C-Line is part of the DIMENSION power supply family, existing alongside the high featured Q-Line.

The CS3.241 includes all the essential basic functions but also includes important features of small size, high efficiency, wide temperature range and is NEC Class 2 compliant.

The wide range input makes worldwide installation and usage very simple. Defects or system failures caused by wrongly set switches cannot occur.

High immunity to transients and power surges as well as low electromagnetic emission and a large international approval package for a variety of applications makes this unit suitable for nearly every situation.

SHORT-FORM DATA

Output voltage	DC 24V	
Adjustment range	24 - 28V	
Output current	3.3A	at 24V
	2.7A	at 28V
Output power	80W	
Output ripple	max. 50mVpp	20Hz to 20MHz
AC Input voltage	AC 100-240V	±10%
		Wide-range input
Mains frequency	50-60Hz	±6%
AC Input current	1.23 / 0.68A	at 120 / 230Vac
DC Input voltage	DC 110-300V	-20 / +25%
DC Input current	0.81 / 0.29A	at 110 / 300Vdc
Power factor	0.61 / 0.56	at 120 / 230Vac
AC Inrush current	23 / 45A peak	at 120 / 230Vac
Efficiency	88.0 / 89.8%	at 120 / 230Vac
Losses	11.1 / 9.1W	at 120 / 230Vac
Temperature range	-25°C to +70°C	operational
Derating *)	1.8W/°C	+60 to +70°C
Hold-up time	29 / 120ms	at 120 / 230Vac
Dimensions	32x124x102mm	WxHxD
Weight	430g / 0.95lb	

ORDER NUMBERS

Power Supply	CS3.241	24-28V Standard unit
Accessory	ZM1.WALL	Wall mount bracket
	ZM11.SIDE	Side mount bracket
	YRM2.DIODE	Redundancy module

MARKINGS



NEC CLASS 2



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TERMINOLOGY, ABBREVIATIONS AND DEFINITIONS

PE and $\oplus$ symbol	PE is the abbreviation for Protective Earth and has the same meaning as the symbol $\oplus$.
Earth, Ground	This document uses the term "earth" which is the same as the U.S. term "ground".
T.b.d.	To be defined, value or description will follow later.
AC 230V	A figure displayed with the AC or DC before the value represents a nominal voltage with standard tolerances (usually $\pm 15\%$) included. E.g.: DC 12V describes a 12V battery disregarding whether it is full (13.7V) or flat (10V)
230Vac	A figure with the unit (Vac) at the end is a momentary figure without any additional tolerances included.
50Hz vs. 60Hz	As long as not otherwise stated, AC 100V and AC 230V parameters are valid at 50Hz mains frequency. AC 120V parameters are valid for 60Hz mains frequency.
may	A key word indicating flexibility of choice with no implied preference.
shall	A key word indicating a mandatory requirement.
should	A key word indicating flexibility of choice with a strongly preferred implementation.

1. INTENDED USE

This device is designed for installation in an enclosure and is intended for the general professional use such as in industrial control, office, communication, and instrumentation equipment.

Do not use this power supply in equipment, where malfunction may cause severe personal injury or threaten human life.

This device is designed for use in hazardous, non-hazardous, ordinary or unclassified locations.

2. INSTALLATION REQUIREMENTS

This device may only be installed and put into operation by qualified personnel.

This device does not contain serviceable parts. The tripping of an internal fuse is caused by an internal defect.

If damage or malfunction should occur during installation or operation, immediately turn power off and send unit to the factory for inspection.

Mount the unit on a DIN-rail so that the input terminals are located on the bottom of the unit. For other mounting orientations see de-rating requirements in this document. See chapter 24.13.

This device is designed for convection cooling and does not require an external fan. Do not obstruct airflow and do not cover ventilation grid (e.g. cable conduits) by more than 15%!

Keep the following installation clearances: 40mm 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).

A disconnecting means shall be provided for the output of the power supplies when used in applications according to CSA C22.2 No 107.1-01.

⚠ WARNING Risk of electrical shock, fire, personal injury or death.

- 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.
- Turn power off before working on the device. Protect against inadvertent re-powering.
- Make sure that the wiring is correct by following all local and national codes.
- Do not modify or repair the unit.
- Do not open the unit as high voltages are present inside.
- Use caution to prevent any foreign objects from entering the housing.
- Do not use in wet locations or in areas where moisture or condensation can be expected.
- Do not touch during power-on, and immediately after power-off. Hot surfaces may cause burns.

Notes for use in hazardous location areas:

The power supply is suitable for use in Class I Division 2 Groups A, B, C, D locations.

WARNING EXPLOSION HAZARDS!

Substitution of components may impair suitability for this environment. Do not disconnect the unit or operate the voltage adjustment unless power has been switched off or the area is known to be non-hazardous.

3. AC-INPUT

AC input	nom.	AC 100-240V	±10%, Wide-range input
Mains network systems		TN, TT or IT	
AC input range	min.	90-264Vac 85-90Vac 264-300Vac	continuous operation short-term or with reduced output current max. 500ms
Allowed voltage L or N to earth	max.	300Vac	continuous, IEC 62103
Input frequency	nom.	50–60Hz	±6%
Turn-on voltage	typ.	75Vac	steady-state value, see Fig. 3-1
Shut-down voltage	typ.	58Vac	steady-state value, see Fig. 3-1
External input protection	See recommendations in chapter 22.3.		

		AC 100V	AC 120V	AC 230V	
Input current	typ.	1.48A	1.23A	0.68A	at 24V, 3.3A, see Fig. 3-3
Power factor*)	typ.	0.62	0.61	0.56	at 24V, 3.3A, see Fig. 3-4
Crest factor**)	typ.	3.1	3.2	4.0	at 24V, 3.3A
Start-up delay	typ.	95ms	95ms	95ms	see Fig. 3-2
Rise time	typ.	18ms	29ms	56ms	at 24V, 3.3A const. current load, 0mF load capacitance, see Fig. 3-2
	typ.	35ms	52ms	92ms	at 24V, 3.3A const. current load, 3.3mF load capacitance
Turn-on overshoot	max.	400mV	400mV	400mV	see Fig. 3-2

*) The power factor is the ratio of the true (or real) power to the apparent power in an AC circuit.

**) The crest factor is the mathematical ratio of the peak value to RMS value of the input current waveform.

Fig. 3-1 Input voltage ranges

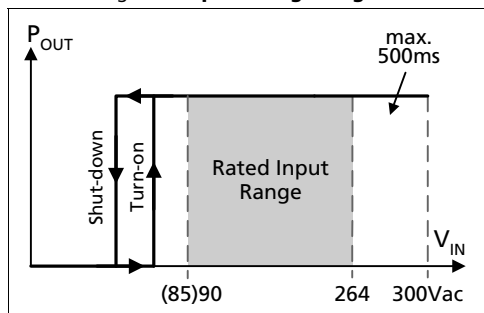


Fig. 3-2 Turn-on behavior, definitions

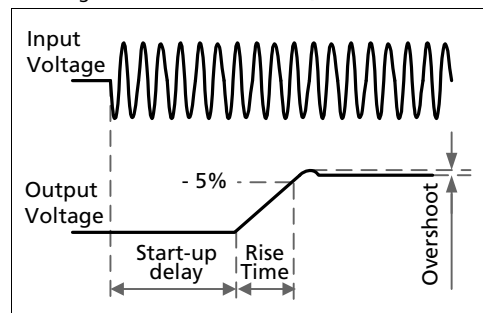


Fig. 3-3 Input current vs. output load at 24V

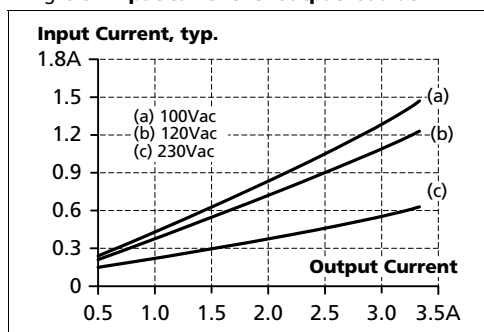


Fig. 3-4 Power factor vs. output load

