Power Supplies & LED Drivers

CC/CV & Custom Power Supplies

Constant-current and constant-voltage supplies, typically 10–600 W, for OEM products.

Rating band: Typically 10–600 W

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Invitrona manufactures switch-mode power supplies that convert a single-phase AC supply into regulated DC, typically from 10 to 600 W. Constant-voltage outputs suit control electronics, motors and lighting strips; constant-current outputs suit LED arrays, charging and electrochemical loads. The output window, protection behaviour, mechanical format and thermal conditions are fixed around the host product before validation.

Class summary

Typical values for the class

Rating range
Typically 10–600 W

Output
CC, CV or CC+CV

DC output
Typically 12–48 V DC

Format
Enclosed, open frame or DIN rail

Typical specification

Parameter	Value or range	Conditions and basis
Rating range	Typically 10–600 W	Continuous, at the stated ambient temperature
Input voltage	100–240 V AC nominal; 90–264 V AC operating	Single phase
Frequency	50 / 60 Hz	Operation typically within 47–63 Hz
DC output	Typically 12–48 V DC	Other voltages by assessment
Output mode	Constant voltage (CV), constant current (CC) or combined CC+CV	Output window agreed for each programme
Voltage regulation	Typically ±1% (CV)	Across rated line and load
Ripple and noise	Typically below 1% of rated output voltage, peak to peak	Measured at 20 MHz bandwidth, rated load
Efficiency	Typically 85–93%	At full load, 230 V AC input
Power factor	Typically above 0.9 with active power factor correction	At full load on ratings where PFC is fitted
Protection	Short-circuit, overload, over-voltage and over-temperature	Auto-recovery or latch-off as agreed
Isolation	Typically 3 kV AC input to output	Class I or Class II construction as agreed
Operating temperature	Typically -20 to +50 °C	Derating above 50 °C

Figures are typical values for the class and rating band; the quotation states the values for a specific unit.

Parameter	Value or range	Conditions and basis
Cooling	Natural convection; fan cooling at higher ratings	Orientation and clearance stated for each format
Mechanical format	Enclosed perforated metal case, open frame, DIN rail or potted	Dimensions agreed with the host product

Selection and application

Features

Feature	What it means in use
CC and CV operation	The output can regulate voltage, current or both, with the crossover point set for the connected load.
Universal input	A 100–240 V AC input range lets one design serve products sold into different supply conditions.
Defined protection behaviour	Short-circuit, overload, over-voltage and over-temperature responses are agreed as auto-recovery or latch-off.
Format for the host product	Enclosed, open-frame, DIN-rail and potted formats are matched to the space, cooling and mounting in the host product.
Controlled changes	Revisions to a supplied design follow agreed change notification, so the host product's validation stays current.

Selection questions

Question	Answer
What is the difference between CC and CV?	A constant-voltage supply holds the output voltage and lets the load draw the current it needs. A constant-current supply holds the output current and lets the voltage settle where the load requires, within a stated window.
Can an existing supply be modified for my product?	Output voltage, current, connectors and mechanical format can often be adapted from an existing platform. Changes are reviewed for thermal and protection effects before validation.
Who is responsible for safety and EMC evidence?	Responsibilities for evidence on the power supply and on the finished product are agreed at the start of a programme. The supply's evidence does not by itself approve the host product.
What information should I share?	Input supply, output voltage and current, peak loads, operating temperature, available space, mounting and cooling, and expected annual quantities.

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Typical applications

Application context
Industrial controls and automation
LED arrays and lighting systems
Battery charging
Instrumentation and test equipment
Motor and actuator supplies
Telecommunications and security equipment

Where the class fits

	Duty or project context
01	OEM product integration
02	Industrial and application-specific power electronics
03	Recurring requirements with defined validation and change control

Documents for an agreed scope

	Document
01	Controlled requirement or specification record
02	Outline drawing and connection details
03	Validation information for the agreed scope
04	Revision, production and change records for the programme

Information needed for selection

	Input
01	Electrical input, output, load and operating requirements
02	Mechanical, thermal, environmental and interface constraints
03	Validation, quality, traceability and safety-evidence responsibilities
04	Prototype, production, change-control, forecast and continuity expectations

How a requirement is handled

	Activity
01	Control the requirement and interface baseline
02	Agree prototype builds and validation responsibilities
03	Release for production with traceability
04	Manage revisions through agreed change control

Document control

Field	Entry	Field	Entry
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