

Q Series

Quad-Output Enclosed Switching Power Supply

Quad-output enclosed switching power supply for industrial equipment requiring multiple DC voltage rails from a single unit. Available in **60W / 120W**, with four simultaneous output channels combining **+5V, +12V / +15V / +24V, -5V** and **-12V / -15V** rails. Free air convection cooling, complete protection functions, and **2 years warranty**.

DOCUMENT

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AT A GLANCE

60 / 120 W	Quad	3	2 Years
OUTPUT POWER	OUTPUT CHANNELS	MODEL VARIANTS	WARRANTY

Q Series Overview

Quad-output enclosed switching power supply for industrial equipment requiring multiple DC voltage rails from a single unit.

The DAPPRA Q Series is a quad-output enclosed switching power supply series. It is designed for industrial equipment requiring multiple DC voltage rails from a single unit, such as industrial control systems, communication equipment, and automation devices.

The Q Series provides four simultaneous output channels in an enclosed metal chassis. The Q-60 series uses universal AC input 85–264 VAC or 120–370 VDC, while the Q-120 series uses selectable AC input 88–132 VAC / 176–264 VAC by switch, or 240–370 VDC. All models feature short circuit, overload and over voltage protection with free air convection cooling.

CORE SPECIFICATIONS

Series	DAPPRA Q Series
Product Type	Quad-Output Enclosed Switching Power Supply
Output Power	60 W · 120 W
Output Channels	4 simultaneous output channels (CH1 / CH2 / CH3 / CH4)
Output Voltage Combinations	+5V, +12V / +15V / +24V, -5V, -12V / -15V
Input Voltage (Q-60)	85–264 VAC · 120–370 VDC (universal)
Input Voltage (Q-120)	88–132 / 176–264 VAC by switch · 240–370 VDC
Switching Frequency	Q-60: 35 kHz · Q-120: 25 kHz
Cooling	Free air convection (no fan)
Protection	Short circuit / Overload / Over voltage
Housing	Enclosed metal chassis with perforated ventilation
Operating Temp.	-10 °C to +60 °C (derating above +45/+50 °C)
Warranty	2 years

Q Series Key Features

Engineered for multi-output industrial power supply applications.

QUAD OUTPUT IN A SINGLE UNIT

Provides four simultaneous DC output channels — combining positive rails (+5V, +12V / +15V / +24V) with negative rails (–5V, –12V / –15V) — eliminating the need for multiple single-output power supplies.

MULTIPLE MODEL VARIANTS PER RATING

Q-60B/C/D and Q-120B/C/D differ in their output voltage combinations and current distribution, allowing users to select the best match for their application.

UNIVERSAL AC INPUT (Q-60) / SELECTABLE AC INPUT (Q-120)

The Q-60B/C/D use full-range universal AC input 85–264 VAC or 120–370 VDC. The Q-120B/C/D use selectable AC input 88–132 VAC / 176–264 VAC via a switch, or 240–370 VDC.

ENCLOSED METAL CASE WITH COOLING VENTS

Fully enclosed metal chassis with perforated ventilation holes for heat dissipation and electrical safety. Suitable for standalone mounting inside industrial equipment.

FREE AIR CONVECTION COOLING

No fan is required — natural air convection cooling eliminates dust intake, acoustic noise and mechanical wear.

COMPLETE PROTECTION FUNCTIONS

Short circuit protection, overload protection (hiccup mode auto-recovery) and over voltage protection are built in.

FIXED SWITCHING FREQUENCY

Q-60 series: fixed switching frequency at 35 kHz. Q-120 series: fixed switching frequency at 25 kHz.

2 YEARS WARRANTY

Standard 2 years warranty for all Q Series models.

Q Series Model Code & Selection

Select the appropriate Q model according to the required output power, output voltage combination and current on each output channel.

Model Code Structure

Q - 120 B

FIELD	MEANING	AVAILABLE VALUES
Q	Series prefix	Q
120	Output Wattage — rated output power in Watts	60 / 120
B / C / D	Model Variant — output voltage and current distribution	B / C / D

Example: Q-120B = Q Series, 120W output power, B variant (+5V, +12V, -5V, -12V outputs).

MODEL LIST - Q-60 SERIES (60W)

MODEL	CH1	CH2	CH3	CH4	RATED POWER	EFFICIENCY
Q-60B	5V / 5.5A	12V / 2A	-5V / 0.5A	-12V / 0.5A	60 W	70%
Q-60C	5V / 5.5A	15V / 1.5A	-5V / 0.5A	-15V / 0.5A	60 W	72%
Q-60D	5V / 4A	12V / 1A	-5V / 1A	-12V / 0.5A	62 W	75%

Q-60 series: universal AC input 85–264 VAC or 120–370 VDC, free air convection cooling, 35 kHz fixed switching frequency. Dimensions: 159 × 97 × 38 mm.

MODEL LIST - Q-120 SERIES (120W)

MODEL	CH1	CH2	CH3	CH4	RATED POWER	EFFICIENCY
Q-120B	5V / 11A	12V / 4A	-5V / 1A	-12V / 1A	120 W	77%
Q-120C	5V / 10A	15V / 3.5A	-5V / 1A	-15V / 1A	122.5 W	76%
Q-120D	5V / 8A	24V / 2A	-5V / 2A	-12V / 1A	124 W	80%

Q-120 series: selectable AC input 88–132 / 176–264 VAC by switch, or 240–370 VDC, 25 kHz fixed switching frequency. Dimensions: 199 × 110 × 50 mm. Q-120B is replaced by RQ-125B.

Output current and output power must not exceed the rated value. Each model variant (B/C/D) provides a different combination of output voltage and current distribution across the four channels.

Q Series Dimensions

Enclosed metal chassis with perforated ventilation design. All dimensions in mm, tolerance ± 1 mm.

Q-60 SERIES	
Length (L)	159 mm
Width (W)	97 mm
Height (H)	38 mm
Housing	Enclosed metal chassis with vents
Cooling	Free air convection (no fan)

Q-120 SERIES	
Length (L)	199 mm
Width (W)	110 mm
Height (H)	50 mm
Housing	Enclosed metal chassis with vents
Cooling	Free air convection (no fan)

MOUNTING DIMENSIONS

MODEL	LENGTH (L)	WIDTH (W)	HEIGHT (H)	MOUNTING
Q-60B / Q-60C / Q-60D	159 mm	97 mm	38 mm	Chassis base
Q-120B / Q-120C / Q-120D	199 mm	110 mm	50 mm	Chassis base

Mounting holes on the chassis base. Ensure the unit is securely fixed to prevent vibration. Refer to the specific model datasheet for detailed mounting hole locations.

Measurement unit: mm. Data is manually measured and may contain minor deviations — please refer to the actual product for final dimensions.

Q Series Installation

The Q Series uses an enclosed chassis design for standalone mounting inside industrial equipment. Adequate ventilation clearance is required.

01 / 06 Chassis Mounting Mount the unit on a flat metal surface using the mounting holes on the chassis base. Ensure the unit is securely fixed to prevent vibration and movement.	02 / 06 Ventilation Clearance Always allow good ventilation clearances around the unit: at least 5 mm on left and right, 40 mm above and 20 mm below, to prevent overheating.	03 / 06 Heat Source Clearance When the adjacent device is a heat source, keep 10–15 cm clearance to prevent the power supply from overheating.
04 / 06 FG Must Be Connected to PE The FG (Frame Ground) terminal must be connected to PE (Protective Earth) for safety and to ensure proper EMC performance.	05 / 06 Operating Temperature Limits Q-60 and Q-120 operate from –10 °C to +60 °C with derating above +45 °C or +50 °C depending on the model. Do not install near fire sources.	06 / 06 Indoor Use Only Install the unit only in a dry, well-ventilated location. Do not install in places with high moisture or near water. The unit is designed for indoor industrial use.
The Q Series operates with free air convection cooling and requires adequate ventilation clearance. Ensure the perforated ventilation openings on the chassis are not blocked.		

Q Series Wiring & Terminal

The Q Series uses screw-type terminal blocks for input and output connections. Use copper wire only and ensure all strands enter the terminal connection securely.

INPUT TERMINAL	
TERMINAL	ASSIGNMENT
FG	Frame Ground (Protective Earth)
AC/N	AC Neutral Input
AC/L	AC Line Input
FG must be connected to PE (Protective Earth) for safety and EMC performance.	

OUTPUT TERMINAL	
TERMINAL	ASSIGNMENT
CH1	Positive rail 1 (+5V)
CH2	Positive rail 2 (+12V / +15V / +24V)
CH3	Negative rail 1 (−5V)
CH4	Negative rail 2 (−12V / −15V)
COM	Common Ground
The exact terminal layout depends on the model. Refer to the terminal label on the unit.	

OUTPUT CHANNEL REFERENCE

MODEL	CH1	CH2	CH3	CH4
Q-60B / Q-120B	+5V	+12V	−5V	−12V
Q-60C / Q-120C	+5V	+15V	−5V	−15V
Q-60D	+5V	+12V	−5V	−12V
Q-120D	+5V	+24V	−5V	−12V

Wiring Note: The Q Series provides four output channels sharing a common ground (COM). The positive and negative rails are referenced to the COM terminal. Always verify the terminal label before wiring. Do not connect both the primary and the secondary sides together.

Q Series Wiring Specification

Recommended wire gauge, terminal torque settings, and input configuration for the Q Series.

RECOMMENDED WIRE			TERMINAL TORQUE		INPUT CONFIGURATION	
AWG	CURRENT	CROSS-SECTION	MODEL GROUP	TORQUE	Q-60 Series	Universal 85–264 VAC / 120–370 VDC
18	0–6 A	0.75 mm ²	Q-60 Series	5 kgf-cm	Q-120 Series	Selectable 88–132 / 176–264 VAC, or 240–370 VDC
16	6–10 A	1.00 mm ²	Recommended screwdriver: 3 mm slotted type. Ensure all strands enter the terminal.		Frequency	47–63 Hz
14	13–16 A	1.52 mm ²			Inrush	Cold start (refer to datasheet)
12	16–25 A	2.5 mm ²				
Use stranded copper wire only. ≥80 °C rated (e.g. UL1007).						

OUTPUT CHANNEL LOAD REFERENCE

MODEL	CH1 LOAD	CH2 LOAD	CH3 LOAD	CH4 LOAD	TOTAL POWER
Q-60B	5V / 5.5A	12V / 2A	–5V / 0.5A	–12V / 0.5A	60 W
Q-60C	5V / 5.5A	15V / 1.5A	–5V / 0.5A	–15V / 0.5A	60 W
Q-60D	5V / 4A	12V / 1A	–5V / 1A	–12V / 0.5A	62 W
Q-120B	5V / 11A	12V / 4A	–5V / 1A	–12V / 1A	120 W
Q-120C	5V / 10A	15V / 3.5A	–5V / 1A	–15V / 1A	122.5 W
Q-120D	5V / 8A	24V / 2A	–5V / 2A	–12V / 1A	124 W

Output Channel Configuration: The Q Series provides four simultaneous DC output channels with a common ground (COM). Output current and output power must not exceed the rated value on the specification. Each channel has independent load regulation and voltage tolerance.

Q Series Safety & Cautions

Read and follow all safety instructions before installing, wiring, maintaining or modifying the Q Series power supply.

01 • ELECTRICAL SHOCK HAZARD

Risk of electrical shock and energy hazard. All failures should be examined by a qualified technician. Do not remove the case.

02 • PRIMARY / SECONDARY ISOLATION

Connecting both the primary and the secondary sides together is not allowed — risk of electric arcs and electric shock (danger to life).

03 • BURN HAZARD

Do not touch the unit in operation and shortly after disconnection.

04 • FIRE & SHORT CIRCUIT

The openings should be protected from foreign objects or dripping liquids.

05 • PROTECTIVE EARTH

The FG (Frame Ground) must be connected to PE (Protective Earth).

06 • RATED OUTPUT

Output current and output power must not exceed the rated value on its specification.

07 • BEFORE SERVICING

Disconnect the system from supply voltage before any installation, maintenance or modification work.

08 • FUSE REPLACEMENT

For continued protection against risk of fire, replace only with the same type and rating of fuse.

09 • EMC DIRECTIVE

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.

Pollution Degree 2: Applies where there is only non-conductive pollution that might temporarily become conductive due to occasional condensation. Generally refers to dry, well-ventilated locations.

Q Series Industrial Applications

The Q Series is suitable for industrial equipment requiring multiple DC voltage rails from a single power supply unit.

▣ Industrial Control Systems	▣ Communication Equipment	▣ Automation Devices
▣ Test & Measurement	▣ Instrumentation	▣ Process Control
▣ Laboratory Equipment	▣ Mixed-Voltage Systems	▣ Embedded Systems

TYPICAL USE CASES

MULTI-RAIL INDUSTRIAL EQUIPMENT One Q Series unit replaces multiple single-output power supplies, reducing wiring complexity and cabinet space.	INSTRUMENTATION & TEST The +5V and ±12V / ±15V combinations are ideal for op-amp circuits, sensors, ADCs and general instrumentation.
COMMUNICATION EQUIPMENT Stable multi-rail outputs feed transceivers, controllers and logic circuits in a single compact enclosed unit.	EMBEDDED SYSTEMS +5V for digital logic, ±12V for analog rails, and ±5V for signal conditioning — all from one power supply.

FAQ & Contact Information

Frequently asked questions and DAPPRA contact details.

What is the DAPPRA Q Series?

The DAPPRA Q Series is a quad-output enclosed switching power supply series designed for industrial equipment requiring multiple DC voltage rails from a single unit. It includes 60W and 120W models with various combinations of positive and negative output voltages.

What output voltages are available in the Q Series?

The Q Series provides four output channels. Q-60B / Q-120B: +5V, +12V, -5V, -12V. Q-60C / Q-120C: +5V, +15V, -5V, -15V. Q-60D: +5V, +12V, -5V, -12V. Q-120D: +5V, +24V, -5V, -12V.

What is the input voltage range of the Q Series?

The Q-60B/C/D models support a universal AC input of 85–264 VAC or 120–370 VDC. The Q-120B/C/D models use a selectable AC input of 88–132 VAC / 176–264 VAC by switch, or 240–370 VDC.

What is the switching frequency of the Q Series?

The Q-60 series uses a fixed switching frequency of 35 kHz. The Q-120 series uses a fixed switching frequency of 25 kHz.

What protections does the Q Series provide?

The Q Series provides short circuit protection, overload protection and over voltage protection.

Does the Q Series include a cooling fan?

The Q-60 and Q-120 models use free air convection cooling without a fan.

What is the operating temperature range of the Q Series?

The Q-60 and Q-120 series operate from -10 °C to +60 °C with derating above +45 °C or +50 °C, depending on the model.

What is the warranty period for the Q Series?

The Q Series comes with a 2 years warranty.

How do I choose the right Q Series model?

Select the Q model according to the required output power (60W or 120W) and the required current on each of the four output channels. Q-60B/C/D differ in voltage and current distribution; Q-120B/C/D differ in voltage and current distribution.

Contact DAPPRA

For product selection, technical support, samples or quotation, please contact us through the channels below.

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