ICS Triplex T8240

01 / What the shelf contributes

ICS Triplex T8240 houses up to three Trusted Power Packs and provides their AC input, common DC output and monitoring interfaces. The shelf forms the distribution and interconnection structure of a configurable Trusted power supply assembly.

01 Separate AC feeders

02 Three pack positions

03 Common DC bus

04 Load plus redundancy margin

Pack allocation

Three removable Power Packs share the shelf output. A fully populated shelf supports up to 2250 W total, or 1500 W while retaining one-pack redundancy. Those figures describe the configured assembly rather than power generated by an empty shelf. Each pack has its own retained AC connection, and the first pack position is on the right when viewed from the front.

Distribution boundary

The positive and negative output terminal blocks are floating relative to the frame. The approved installation determines whether either output is grounded. Shelves feeding one busbar can share current through TC-323; that cable must not connect independent A/B supplies or separate busbars because it couples the sharing and sensing circuits.

Diagnostic integration

The rear diagnostic interface works with a Power Port and, where fitted, a Power Controller. Shelf addresses must be unique within the controller arrangement. Spare pack slots use the appropriate shields, while alarm contacts associated with deliberately empty positions require the specified links; a blank cover alone does not change the alarm circuit.

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02 / Capacity and connection architecture

Power Pack positions	3
Compatible pack outputs	T8231: 24 V DC; T8232: 28 V DC
Installed pack rating	750 W per compatible Power Pack
Fully populated shelf capacity	2250 W total
One-pack-redundant capacity	1500 W with three packs installed
Four-shelf total capacity	9000 W maximum; configuration dependent
AC input connections	3 clip-retained IEC 60320 connectors
Connector rating, Europe/Asia	10 A at 250 V AC

A concrete redundancy calculation

With three 750 W packs, 2250 W is available before a failure. Reserving one pack leaves 1500 W for the protected load. At a nominal 24 V this corresponds to a calculated 62.5 A load, before any application-specific derating or distribution constraints.

Separate electrical boundaries

An AC feeder, a DC bus and a current-sharing connection are three different boundaries. Multiple mains feeds alone do not prove independent DC paths, and two nearby shelves are not automatically part of one sharing group.

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03 / Shared buses and independent supplies

Connector rating, North America	15 A at 120 V AC
DC output terminal blocks	2: V+ and V−
Output screw connections	3 M4 screws per terminal block
Output reference	V+ and V− floating relative to frame ground
Rear interface	25-pin female D-sub
Current-sharing interconnect	TC-323
Controller addressing capacity	4 shelves / 12 Power Packs
Low-load sharing limitation	Below 2 A per Power Pack, current sharing may be unreliable

The low-load exception

Normal sharing behavior assumes enough current for the sharing circuit to operate. A maintenance test with almost no load may therefore produce a different status from normal service. Interpret the test condition explicitly.

An empty slot changes two things

A spare position affects physical closure and alarm logic. The shield closes the opening; the specified contact links account for the absent pack. Neither action creates additional power capacity.

04 / Interpreting service observations

Can a T8240 assembly loaded to 2000 W retain one-pack redundancy?

Not with one three-pack shelf. Losing one 750 W pack leaves 1500 W capacity. Rework the loading or supply arrangement so the surviving packs support the required load.

Why might a lightly loaded T8240 show an unexpected PWR OK indication?

Below 2 A per pack, current sharing can be unreliable and PWR OK may not illuminate. Check the actual pack loads, output voltage and diagnostic contacts together before treating the indication as proof of a failed pack.

Should the TC-323 connection between two T8240 shelves follow their cabinet proximity?

No. It follows the electrical busbar arrangement. Only shelves intended to share the same DC load should share this connection; independent A/B buses must remain separate.

Does a floating T8240 output mean its protective frame ground can be omitted?

No. Floating V+ and V− describes the DC output reference. Frame protective grounding remains part of the approved installation, and any connection of an output pole to ground must follow that design.

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05 / Integration boundaries and references

Single-shelf redundant distribution

Combine three compatible packs while limiting the supported load to the required one-pack-out capacity.

Higher-capacity common bus

Interconnect compatible shelves feeding the same DC bus where the load and protection design require additional capacity.

Independent A/B supplies

Use distinct supply assemblies for separate busbars and preserve separation of their current-sharing connections.

Monitored power assemblies

Integrate the rear Power Port alarm contacts and optional controller with the installed monitoring design.

Technical scope

Rockwell Automation Trusted Power System, PD-T824X Issue 11. Shelf, Power Port and Power Pack ratings are distinguished below. Output capacity depends on the installed packs and redundancy design.

Other automation product references

Emerson KJ2005X1-BK1 12P4688X052 SE3007

Foxboro FBM232 P0926GW

Honeywell TC-IAH161

Separate references; no replacement or compatibility is implied.