ICS Triplex T8243

01 / Reading the power-state interface

ICS Triplex T8243 converts Trusted Power Pack and shelf status signals into volt-free alarm contacts. It plugs into the rear of the Power Shelf and provides connections for system monitoring and the optional Power Controller.

01 Pack AC/DC/thermal signals

02 T8243 relay logic

03 CON3 contact states

04 System alarm interpretation

Connector roles

CON1 mates with the Power Shelf, while CON2 extends the interface to other compatible shelves or a controller. CON3 carries the system supply and six pack-related alarm contact pairs. The Power Port is retained by D-sub jack screws; it is an interface accessory, not an AC-to-DC Power Pack.

Auxiliary power

The external 24 V supply powers the relays and is regulated internally for the low-voltage electronics. The supply requires a 500 mA F-rated fuse near its source; an additional non-replaceable fuse is present on the interface. Loss of this auxiliary supply can open healthy-state contacts even while a separately powered DC bus remains energized.

Address ownership

J1 and J2 select one of four shelf addresses for the I2C control bus. These jumpers identify the shelf rather than changing the alarm logic. The interconnect must follow a common DC bus, and independent supplies must not be joined through it merely to obtain a convenient monitoring connection.

02 / Connectors and shared terminals

External interface supply	24 V DC
Source fuse	500 mA, F-rated, near the source
Internal electronics supply	Regulated 5 V
Shelf connection CON1	25-way male D-sub
Extended connection CON2	25-way female D-sub
Alarm/supply connector CON3	10 ways
CON3 supply terminals	Pin 1: +24 V; pin 6: 0 V
CON3 DC alarm pairs	2–3: pack 1; 3–4: pack 2; 4–5: pack 3
CON3 AC alarm pairs	9–10: pack 1; 8–9: pack 2; 7–8: pack 3
DC alarm combination	DCFAIL OR over-temperature protection
Healthy alarm contact	Closed, relay energized

Signal path and diagnostic meaning

The Power Port receives pack-level signals and converts them to relay contacts. The controller sees a contact state rather than a full fault code. Combining that state with local pack indications provides a more precise diagnosis.

A shared auxiliary supply creates a shared symptom

A single supply feeds the interface electronics and relays. Loss of that supply can affect several alarm paths together. Troubleshooting should therefore check shared causes before replacing several Power Packs.

03 / Addressing a common-bus group

Alarm contact state	Open, relay de-energized
Shelf-address jumpers	J1 and J2
Address combinations	4 shelf addresses / up to 12 pack addresses
CON2 serial-data terminals	Pin 5: SDA; pin 6: SCL
CON2 controller supply	Pin 7: 24 V from Power Port
CON2 current-sharing terminal	Pin 24: CS
CON2 internally linked pins	19, 20 and 25
CON3 cable block	Weidmuller BLZF3.5/10
Fault-relay contact form	SPDT
Fault-relay resistive load	0.5 A at 125 V AC; 1 A at 24 V DC
Fault-relay maximum switching power	62.5 VA or 30 W

Addressing is not alarm selection

The four J1/J2 combinations assign shelf addresses for communication. They do not select whether a relay is AC or DC, nor do they suppress an unused pack alarm. Keep communication identity separate from contact wiring.

Contact ratings belong to the monitoring circuit

The relay switching limits describe the external alarm circuit. They are unrelated to the hundreds of watts carried by the Power Packs and must not be used to describe the load capability of a supply shelf.

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04 / Fault combinations and limitations

Why might all T8243 alarm inputs change even though the DC bus remains live?

Check the Power Port 24 V supply, its source fuse and common monitoring wiring. Its relays depend on that auxiliary supply, so its loss can open contacts without proving that all separate Power Packs stopped producing output.

Can one open DC contact on T8243 distinguish over-temperature from output failure?

No. DCFAIL and the over-temperature protection signal are combined for that pack. Compare local indications and the relevant electrical and thermal conditions to identify the cause.

Does an amber fan indication always open the T8243 DC alarm contact?

No. The fault table shows a locked fan rotor with amber indication while AC and DC contacts remain closed and output remains on. An over-temperature trip opens the DC contact. Do not treat these conditions as identical.

What happens if two T8243 interfaces retain the default shelf address?

The controller bus can encounter duplicate pack addresses. Set a unique J1/J2 combination for each shelf in the controller group before applying the required startup sequence.

05 / Monitoring design and technical references

Per-pack power supervision

Bring distinct AC-fail and DC-fail contact paths from each of the three pack positions into the system monitoring design.

Composite DC-fault reporting

Represent a pack DC-output fault or over-temperature condition through one corresponding DC contact.

Addressed controller integration

Assign a unique shelf address using J1/J2 before connecting the optional Power Controller.

Common-bus shelf interconnection

Extend the compatible current-sharing interface between shelves that feed the same busbar.

Technical scope

Rockwell Automation Trusted Power System, PD-T824X Issue 11. Interface, connector and alarm values apply to the T8243 Power Port. Relay component ratings are not the power rating of the connected DC supply.

Other automation product references

Emerson KJ2005X1-BK1 12P4688X052 SE3007

Foxboro P0922YU FPS400-24

Honeywell 10302/2/1

Separate references; no replacement or compatibility is implied.