MTL 8920-PS-DC

Technical Reference and Engineering Data

MTL 8920-PS-DC is a mtl8000 intrinsically safe i/o power-supply module for the MTL8000 Process I/O platform. The complete marking must be matched to the installed hardware, wiring and configuration before replacement.

01 Exact identity and system role

Complete model	8920-PS-DC
Product type	MTL8000 intrinsically safe I/O power-supply module
Manufacturer	MTL
Technical source	Eaton MTL 8000 2/x power supplies overview datasheet
Input voltage	18.5 to 36 V DC
Output voltage	12 V DC +/-5%
Output current	5 A
Input/output isolation	250 V AC rms; tested at 1,500 V AC rms
Efficiency at 18.5 V input	76% at 4.1 A
Efficiency at 24 V input	78% at 3.3 A

System position

8920-PS-DC converts a nominal 24 V DC plant supply to isolated 12 V DC power for MTL8000 intrinsically safe I/O modules; carrier selection and load sharing are part of the node design.

Lifecycle and installed-base context

Exact product phase	Eaton lists the MTL8000 2/x power-supply family, including the 8920-PS-DC documentation, in its discontinued-product support area.
Node support	Retain the approved carrier, 24 V DC feeder, actual module load, redundancy arrangement and Bus Interface Module failure indication.
Supply boundary	Apter Power availability applies to the offered power module and is separate from Eaton discontinued-product support.

02 Verified technical data

Input voltage	18.5 to 36 V DC
Output voltage	12 V DC +/-5%
Output current	5 A
Input/output isolation	250 V AC rms; tested at 1,500 V AC rms
Efficiency at 18.5 V input	76% at 4.1 A
Efficiency at 24 V input	78% at 3.3 A
Efficiency at 36 V input	76.5% at 2.1 A
Operating temperature, 60% load	-40 to +70 deg C

Additional engineering data

Operating temperature, full load	-40 to +55 deg C optimum orientation
Storage temperature	-40 to +85 deg C
Relative humidity	5 to 95% noncondensing
Vibration	2 g at 10 to 100 Hz
Shock	10 g, 11 ms
MTBF	80,000 hours at 50 deg C ambient
Ingress protection	IP20
Terminal cable size	2.5 mm2 maximum

Applicability boundary

Exact 8920-PS-DC input, output and carrier relationships are from the Eaton MTL datasheet. Node capacity depends on the installed module mix.

03 Integration and engineering interpretation

MTL8000 IS node supply

Power I/O modules connected to intrinsically safe field circuits.

Redundant node power

Use an additional supply in an approved n+1 arrangement.

Load-shared expansion

Distribute the calculated 12 V load across multiple power modules.

Node-services integration

Mount on compatible MTL8000 carrier positions and report failure to the BIM.

Technical notes

Carrier relationship	Mount the module only on the documented MTL8000 carrier, retain input polarity and feeder protection, and verify the carrier contacts before energizing.
Load and redundancy	The 12 V DC output is rated 5 A; calculate the actual I/O-module load and reserve capacity before applying load sharing or n+1 redundancy.
Technical reference	Eaton MTL8000 2/x power-supplies overview and 8920-PS-DC technical data.

Interpretation boundaries

Probe-only limit	Do not present complete-system range, scale or linearity as a standalone output of 8920-PS-DC.
Target influence	Material, geometry, finish and nearby conductive surfaces can change the installed response.
Length influence	Probe lead and extension cable form part of the calibrated electrical relationship.
Temperature influence	Apply component temperature limits at their actual locations and compare with process transients.
Mechanical influence	Thread engagement, rigidity, target travel and cable support affect repeatability and service life.
Acceptance rule	Use the approved machine baseline and maintenance procedure for the final as-left decision.

04 Diagnostic decisions and support record

How should the load budget for 8920-PS-DC be calculated?	Sum the documented 12 V demand of every installed I/O module, include operating margin and verify the result against each supply and the required redundancy state.
What should be checked if 8920-PS-DC reports failure but 24 V DC is present?	Measure input at the carrier, inspect carrier contacts, confirm 12 V output and load, then review Bus Interface Module diagnostics.
How is n+1 redundancy of 8920-PS-DC proved?	Under the approved process condition, remove or isolate one supply, verify the remaining modules carry the load and confirm the failure indication reaches the BIM.
Why can the number of modules powered by 8920-PS-DC vary?	MTL8000 I/O types have different current demands, so the 5 A capacity supports a module count determined by the actual mix.
What evidence should be recorded before replacing 8920-PS-DC?	Capture the complete nameplate, installed slot or mounting position, companion hardware, wiring identifiers and the accepted operating baseline for the mtl8000 intrinsically safe i/o power-supply module.
How should an intermittent fault around 8920-PS-DC be isolated?	Separate field wiring, connector, supply, grounding, configuration and host-system causes. Reproduce the symptom under a controlled test and change only one variable at a time.
What configuration evidence should be retained after commissioning 8920-PS-DC?	Retain the hardware identity, firmware or parameter record where applicable, channel assignment, as-left measurements, alarm or diagnostic state and the approved functional-test result.
When should 8920-PS-DC be rejected during incoming inspection?	Quarantine the item if the complete marking, connector keying, board revision, protective coating, terminal condition or required companion hardware differs from the approved replacement record.

Verified source

Eaton MTL 8000 2/x power supplies overview datasheet

Related product references

Related product	6ES7153-2BA10-0XB0

Related product	CI858K01 3BSE018135R1
Related product	1756-IF6I
Related product	IS420ESWBH3AX

Engineering contact

Discuss the exact marking and installed application with Apter Power.
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Acceptance evidence package

Nameplate evidence	Overall and close photographs showing 8920-PS-DC, revision, approval and serial details where present.
Installation evidence	Views of the rack position, mechanical datum, terminal assignment, cable route and strain relief.
Configuration evidence	Export or screenshots identifying the approved hardware assignment and parameters without exposing credentials.
Baseline evidence	As-found readings with units, test conditions, machine state and the instrument used.
Inspection evidence	Connector, contact, insulation, fastener, contamination and heat-condition observations.
Functional evidence	As-left readings and the controlled input, output or channel response used for acceptance.
Change evidence	Any wiring, setting, firmware or mechanical change linked to its approved work reference.
Release evidence	Technician, reviewer, date, asset reference and the maintenance-record location for traceability.

Controlled acceptance sequence

01 Isolate	Place the monitored machine and channel in the approved maintenance state; prove the required isolation.
02 Photograph	Capture 8920-PS-DC, the installed datum, connector, route and companion-component markings.
03 Measure	Record mechanical position and the applicable stopped-machine electrical reading before removal.
04 Compare	Check delivered identity, interfaces and evidence against the approved drawing and spare-parts record.
05 Install	Fit without twisting the lead; preserve thread engagement, target clearance, bend radius and strain relief.
06 Set point	Establish the operating gap or datum only with the approved stopped-machine procedure.
07 Prove	Compare local reading, monitor indication and controlled operating response with the accepted baseline.
08 Handover	Record as-left values, photographs, deviations, responsible technician and release approval.

Evidence quality controls

Traceability	Each value is tied to 8920-PS-DC, the asset location, test state, instrument and date.
Repeatability	The same approved method and comparable operating state are used for before-and-after readings.
Resolution	Recorded precision does not exceed the capability of the instrument or source document.
Reference state	Stopped, energized, loaded and process-running observations are clearly distinguished.
Change control	Every changed setting, connection or mechanical datum has an approved reason and reviewer.
Retention	Evidence remains accessible with the maintenance record for future troubleshooting and replacement review.