# Siemens 6EP1437-2BA20

## 01 Power path and operating decisions

Siemens 6EP1437-2BA20 supplies an isolated, regulated DC output from a three-phase AC feeder. It supports high-current control loads with electronic overload protection and a separate output-state relay.

**AC feeder + PE** — **Regulated conversion** — **DC branch protection** — **Configured loads**

### Input and installation relationship

The wide-range three-phase input feeds an isolated DC output whose setpoint is adjusted with a potentiometer. Output conductors and branch protection must suit the maximum relevant RMS current. Where the plant requires a grounded PELV circuit, the DC negative can be bonded to the protective-conductor system using the approved arrangement.

### Load and fault behavior

The output maintains regulation until current limitation is reached. Under overload, voltage and current fall; below approximately 10 V the supply switches off and attempts to restart. This can produce cyclic recovery at a faulted distribution network, so the waveform and branch states are more informative than a single handheld voltage reading.

### Supervision and hardware boundary

The output-ready relay and green LED indicate the local supply state. They do not prove voltage at a remote load or selective operation of downstream protection. Mounting orientation, ventilation and hardware state affect environmental capability; EZ 1 units have a different lower operating-temperature limit from later hardware.

### What needs checking before using an EZ 1 version of 6EP1437-2BA20 in a cold cabinet?

Its lower operating limit is −10 °C rather than the −25 °C limit given for later hardware. Confirm the actual product state and worst cabinet temperature; storage limits do not authorize operation below the applicable boundary.

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## 02 Electrical limits and load allocation

| | |
|---|---|
| Input network | Three-phase AC |
| Rated input | 400–500 V AC |
| Input voltage range | 340–550 V AC |
| Line frequency | 47–63 Hz |
| Input current | 2 A at 400 V; 1.7 A at 500 V |
| Inrush current limit | 60 A maximum at 25 °C |
| Input $I^2t$ | 3.4 $A^2s$ maximum |
| Integrated input fuse | None; external protection required |
| Rated output | 24 V DC / 40 A |
| Output adjustment | 24–28 V; observe 960 W limit |
| Static voltage tolerance | ±3% |
| Static line/load regulation | Approximately 1% / 2% |
| Residual ripple | 150 mV peak-to-peak maximum |

### Continuous versus transient demand

A short peak that satisfies the stated duration and repetition limit must be assessed separately from steady load. Heating, protection response and load voltage still constrain acceptance.

### Setpoint and load current

At 28 V, 960 W corresponds to 34.3 A. At 65 °C the current derating alone gives 34 A from 40 A × (1 − 0.03 × 5); apply all relevant limits rather than selecting the more favorable one.

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## 03 Protection, diagnostics and environment

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|---|---|
| Voltage spikes | 240 mV peak-to-peak maximum, 20 MHz bandwidth |
| Starting delay | 1.5 s maximum |
| Voltage rise | 15 ms typical; 500 ms maximum |
| Extra Power | 60 A for 5 s per minute |
| Short-circuit pulse | 65 A typical for 100 ms; every 2.5 s during operation |
| Current limitation | 50 A typical |
| Short-circuit RMS current | 14 A maximum |
| Mains buffering | 6 ms minimum at 400 V and rated load |
| Output-ready threshold | Above 20 V ±0.5 V |
| Output-ready contact | Normally open; 30 V AC/0.5 A, 60 V DC/0.3 A or 30 V DC/1 A |
| Operating ambient | −25 to +70 °C; EZ 1: −10 to +70 °C; derating applies |
| Temperature derating | 3% of rated current/K from +60 to +70 °C |
| Humidity | 5–95%, non-condensing |
| Parallel power increase | 2 units; matched settings and wiring |

## A contact is not a voltmeter

The local output-ready threshold can remain satisfied while a distant load sees an unacceptable drop. Measure the loaded endpoint and inspect common distribution paths.

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## 04 System connections and fault coordination

### Three-phase control power

Supply a DC distribution network where the protected feeder lies within the specified three-phase range.

### Defined short-duration demand

Accommodate permitted transient peaks while keeping continuous and time-limited load budgets separate.

### Output-state monitoring

Connect the isolated output-ready contact to a correctly rated monitoring input for supply-state supervision.

### Coordinated supply resilience

Combine suitable decoupling or buffering equipment with the supply when the process requires fault tolerance or longer ride-through.

### Cyclic fault response

A repeating output collapse and recovery can be the intended restart behavior under a persistent overload. Check faulted branches before replacing the supply.

### Remote voltage budget

The output-ready threshold is a local status threshold. Cable drop and protection-device losses still determine voltage at the consuming device.

### Redundant capacity

Parallel power increase and redundancy are different designs. Decoupling and adequate remaining capacity are necessary when one supply is lost.

### Can the six-millisecond mains buffer of 6EP1437-2BA20 replace a DC UPS?

No. That minimum applies at 400 V input and rated load and only addresses a brief interruption. Compare the process ride-through requirement with the actual load and add suitable buffering or UPS equipment where needed.

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## 05 Replacement assessment and technical basis

### Lifecycle and replacement scope

The current manufacturing and support phase of 6EP1437-2BA20 is unconfirmed. Replacement suitability depends on the installed supply topology and required operating behavior. Compare the complete article number, input connection, output characteristic and actual hardware state. Treat a change of supply family or operating mode as a circuit-design change.

### Why can 6EP1437-2BA20 produce repeated voltage pulses into a faulted DC bus?

When overload depresses the output below approximately 10 V, the supply switches off and restarts automatically. Inspect branch currents and fault paths during the cycle rather than treating a low average voltage as proof of a failed converter.

### Can two units of 6EP1437-2BA20 be sized by adding both Extra Power ratings?

No. The simultaneous short-term overload capability of parallel supplies must not be counted when configuring the system. Size the continuous load and verify the actual transient profile with the coordinated arrangement.

### Sharing before paralleling

Before joining outputs, align no-load setpoints to within 50 mV and use equivalent connection impedances. Switch the same-type supplies together and verify current distribution under load.

### Technical basis

Siemens SITOP PSU300S Manual, C98130-A7587-A1-7-7629. The ratings apply to the 6EP1437-2BA20 column and stated mounting, input and temperature conditions. Check the supplied hardware state before applying revision-dependent approvals.

### Other Siemens product references

**Siemens 6EP1336-3BA00**

**Siemens 6ES7138-7EC00-0AA0**

**Siemens 6ES7155-6BU00-0CN0**

Separate product references; no substitution or compatibility is implied.