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Downtime is not an option.

SINAMICS PERFECT HARMONY GH180 medium voltage VFDs

Reliability for critical applications

Every element of a SINAMICS PERFECT HARMONY GH180 medium voltage variable frequency drive (VFD) is engineered to maximize productivity and protect your process in a way that other drives can't. Designed in both liquid-cooled and compact air-cooled configurations, the SINAMICS Perfect Harmony GH180 VFD delivers superior versatility, efficiency and process availability for the most demanding applications.

The SINAMICS Perfect Harmony GH180 draws on more than 17 years of testing and refinement to deliver unsurpassed reliability for critical applications. In fact, it's the only drive today approved for use in the nuclear industry.

Uptime is everything

Siemens equipped the SINAMICS Perfect Harmony GH180 with 50+ patented technologies proven to increase the dependability of critical processes. The drive's modularity provides a scalable solution that achieves 99.99% availability, resulting in a significantly reduced total cost of ownership over the drive's lifecycle.

SINAMICS Perfect Harmony GH180 VFDs are the only drives available today with Advanced Cell Bypass, a technology that allows the drive to maintain consistent power even in the event of a cell fault. Should a disturbance occur, integrated ProToPS™ (Process-Tolerant Protection Strategy) technology provides a hierarchical system of warnings that give your operator ample time to evaluate the issue and respond appropriately to avoid system shutdown. When starting multiple motors and transferring them across the line, closed-loop synchronous transfer protects against unnecessary wear and tear.

Proven reliability

- Tested and refined over 17 years
- 99.99% availability
- Advanced Cell Bypass
- Energy-efficient operation
- Modular series-cell topology
- Near-perfect sinusoidal output
- Redundant cooling pumps or blower fans
- ProToPS™ process protection
- High-efficiency IGBT technology
- Only drive used in nuclear applications
- >.95 power factor throughout speed range

#1 Sold
Drive
Worldwide

10,000
Drives
Sold

Different by design

Traditional drives often require up to five additional components: a harmonic filter, power factor correction, transformer, power converter and motor filter. But the SINAMICS PERFECT HARMONY GH180 is far from traditional. The only major components its integrated system requires are a topology isolation transformer and a power converter. It doesn't even need external power factor correction capacitors to exceed .95 power factor at normal operating speeds. The drive's all-in-one design allows for quick and easy drive installations, thereby reducing costs and process downtime while increasing project flexibility.



Siemens optimized the SINAMICS Perfect Harmony GH180's fully integrated VFD systems for easy access to all components so that drive maintenance is simplified and downtime is limited. Each drive includes an integrated isolation transformer, power electronics, controls and a cooling system that can tolerate temperatures from -0° C to +50° C. Designed for longevity, the drive cabinets are constructed to meet the most stringent industrial requirements and withstand the harshest weather conditions.

No drive more trusted

From kiln drives and vertical ball mills to mud pumps and extruders, any application can be paired or retrofit with a SINAMICS Perfect Harmony GH180 VFD to optimize process improvement. It's the No.1 selling drive in the world—with more than 10,000 drives sold—because it's the most trusted.

For more information about SINAMICS Perfect Harmony drives, please visit usa.siemens.com/perfectharmony

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| | GH180 Air-Cooled | GH180 Liquid-Cooled |
|---------------------------------------|---|--------------------------------------|
| Cell current | 40, 70, 100, 140, 200, 260 A at 750 V AC 315, 375, 500, 660 A at 690 V AC 720 A at 630 V AC | 880, 1,250 A at 750 V AC |
| Output voltage | Up to 11.0 kV | Up to 8.0 kV |
| Output power | 200 to 9,000 hp 0.15 to 6.7 MW | 4,000 to 19,000 hp 3.0 to 14.2 MW |
| Typical power converter efficiency | 99% | |
| Typical total drive system efficiency | 97% | |
| Control | Vector Control (NXGII series) | |
| Motor control | Induction motors Synchronous motors Permanent magnet motors Wound rotor motors | |
| Input transformer | Aluminum or copper windings Forced air-cooling | Copper windings Liquid-cooled |
| Motor-side inverter | Multilevel drive (PWM) with IGBT power modules | |
| Input voltage & voltage tolerance | 2.3 to 13.8 kV, ±10% | |
| Input frequency | 50 or 60 Hz, ±5% | |
| Input power factor | ≥ 0.95 above 10% load | |
| Input current harmonics | ≤ 5% TDD (total demand distortion) Meets or exceeds IEEE-519-1992 | |
| Ride-through | Minimum of 5 cycles after loss of input MV without tripping | |
| Output dV/dt | < 3,000 V/μs | |
| Output torque | Rated torque (2-quadrant) available from 10 to 167 Hz | |
| Output frequency & drift | 0.5 to 330 Hz, ± 0.5% | |
| Output voltage harmonics (THDi) | Between 2.0 to 2.5% | |
| Regenerative (4Q) operation? | No; 2Q only | Yes; 4Q available as option |