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Fact Sheet

Danfoss packaged solutions
VLT® PHD-102 Preferred Harmonic Design

The VLT® PHD-102 Preferred Harmonic Design (PHD) is a full-featured, HVAC dedicated drive solution when conformance to IEEE-519 is required, even at the drive terminals. The PHD-102 has a number of functions developed to meet the diverse needs of HVAC applications and is the most practical solution to address growing harmonic concerns in the HVAC industry.

- Meets the most stringent IEEE-519 levels down to 60% load at panel terminals
  - Delivers enhanced ThiD and Power Factor performance across the typical operating range.
  - Exceeds IEEE-519 THvD requirements
- Includes generator friendly features
- Improves performance versus existing harmonic solutions
  - Delivers greater unit efficiency
  - Produces less heat
  - Provides better harmonic performance in a smaller package

Preferred
Harmonic design*

Product range:

3 x 480 V ..... 1.5 – 600 HP
3 x 600 V ..... 1.5 – 650 HP
With 110% overload torque

Larger power sizes and alternate enclosure ratings are available upon request. Please consult factory.

Available enclosure ratings:

- NEMA 1
- NEMA 12
- NEMA 3R

Wall mount units to 75 HP
Floor mount above 75 HP

Feature	Benefit
Better overall harmonic performance.	Meets most stringent IEEE-519 specifications down to 60% load.
Robust single enclosure	3 wire in / 3 wire out design; no field wiring of separate components
Modular design utilizing standard VFDs.	Simplified long-term maintenance (18 pulse solutions require non standard VFD).
Dedicated HVAC functionality	External conversion efforts saved
Utilizes Danfoss VLT® HVAC drive	Full featured HVAC drive. Consult VLT HVAC data sheet for features
Units available with the following options: Fused or CB disconnect Bypass or non bypass Softstart bypass dV/dt output filter	Unit configuration matches practically all HVAC panel specifications

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OSHPD Pre-Approval
All units available with Special Seismic Certification and OSHPD Pre-Approval for ease of review by Authorities Having Jurisdiction.

Application Options
A wide range of integrated HVAC options come standard in the HVAC PHD panel, including damper control, common start/stop, auto bypass, and fire mode.

Fieldbus Communication
Unit comes standard with built-in fieldbus protocols and with optional communication protocols.

External 24 VDC supply (MCB 107)
24 VDC external supply can be added to facilitate drive communication when main power is disconnected.

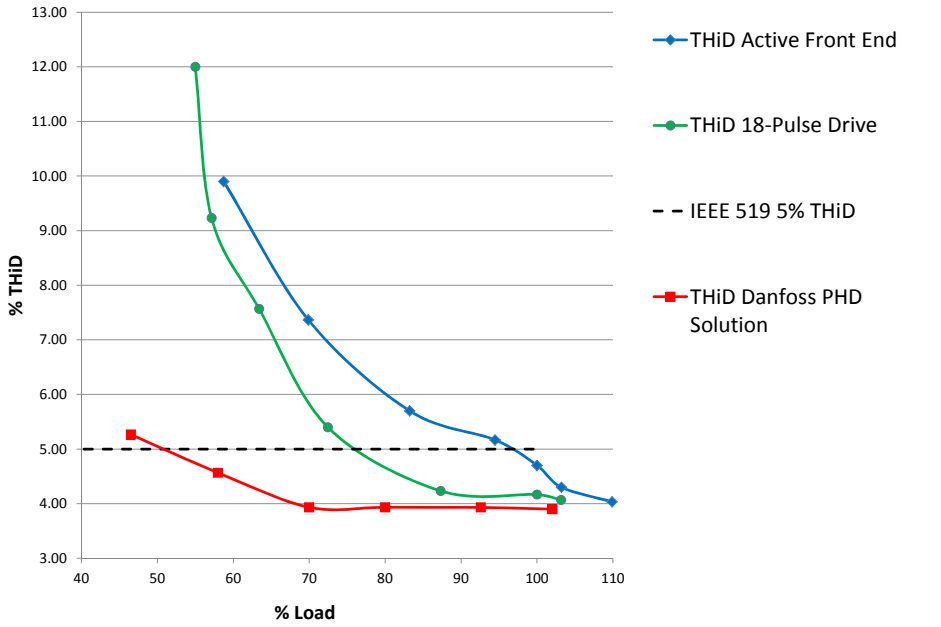
Power Options
A wide range of external power options are available for the VLT® PHD-102 Preferred Harmonic Design solution:
- Fused or Circuit Breaker Disconnect
- Non Bypass
- 3 Contactor Bypass
- Softstarter Bypass
- dV/dt output filters for motor insulation protection

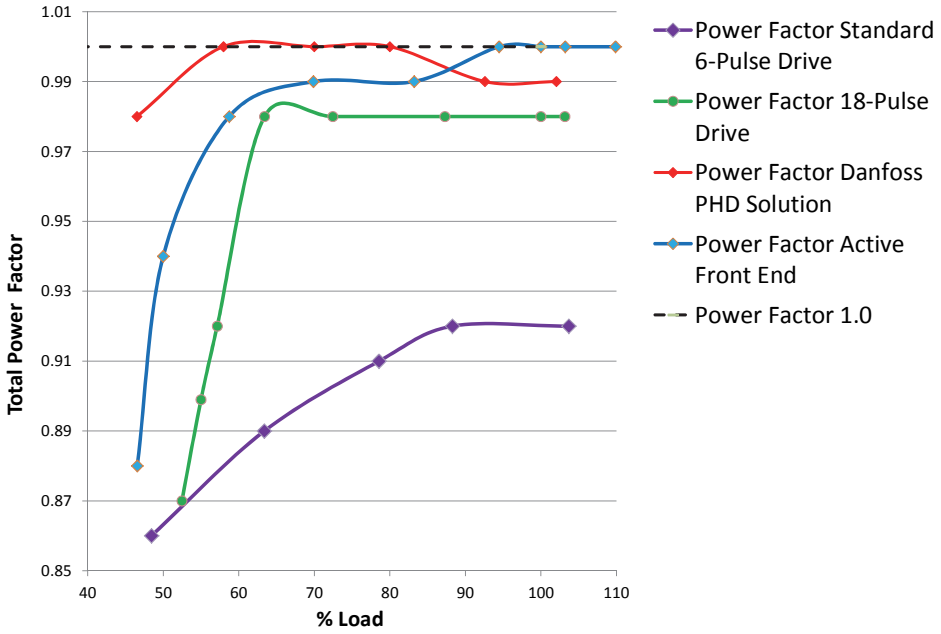
Harmonic Performance*
- THID <5% above 60% load
- THVD <1.6% with <5% voltage line imbalance
- Cos Phi power factor = near unity
- Distortion power factor >.98 at loads >50%

HVAC PC Software Tools
- **MCT 10:** Ideal for commissioning and servicing the drive
- **VLT® Energy Box:** Comprehensive energy analysis tool, shows the drive payback time
- **MCT 31:** Harmonic analysis tool

** Performance can be dependent upon existing power conditions.*

Harmonic Solution Comparison (Typical)





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