



HPS Sentinel™ S Solar Duty Distribution Transformer

power to perform



Hammond
Power Solutions

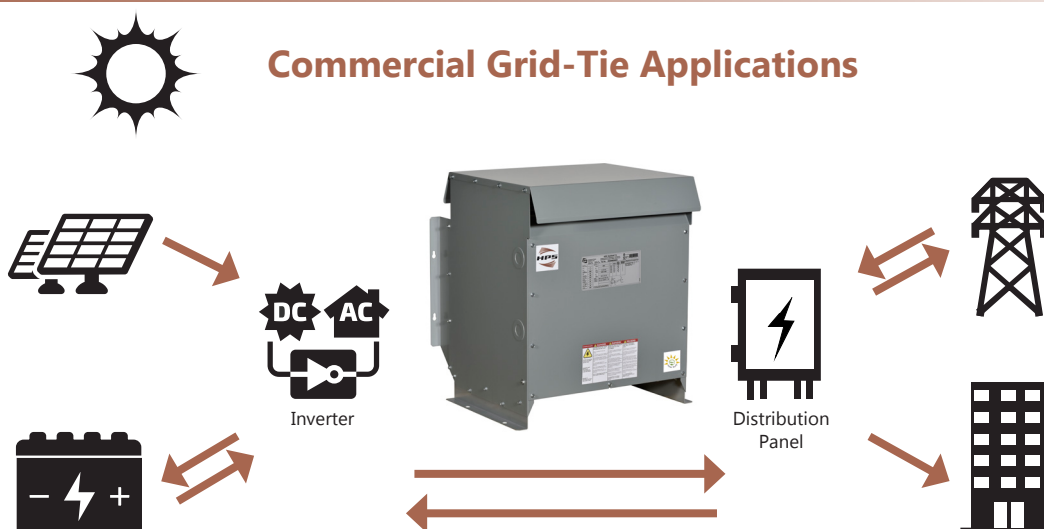
HPS Sentinel™ Solar Duty Transformer

OUR EXPERIENCE

The solar energy market covers a broad range of applications and environments and demands a high level of safety and reliability. Hammond Power Solutions (HPS) offers the broadest variety of dry-type transformer solutions for the difficult applications found in the solar energy market. We have the experience to provide magnetic solutions including solar duty, low and medium voltage grid-tie transformers, grounding transformers and current limiting reactors.

HPS has experienced renewable industry professionals to assist with your transformer needs. Our North American factories provide the manufacturing expertise, reliability and quick supply the renewable energy market requires. The dedication to quality and service are foundations for our success as North America's leading dry-type transformer manufacturer. Partnering with HPS' renewable energy solutions will provide peace of mind to any project.

Typical Grid-Tie Applications



HPS Sentinel Solar Duty Transformers

HPS Sentinel **Solar Duty** transformers are designed for the renewable energy industry. These transformers are designed for applications where voltage adjustments are necessary between the solar generation system and the utility service. Isolation transformers are traditionally used where power flows in a single direction to feed a load.

Many electrical codes require a manufacturer to declare if a transformer is designed for step-up or step-down use. HPS Sentinel Solar Duty transformers are intended for bi-directional* use in utility-interactive generation systems.

The nameplate designates the unit as suitable for bi-directional operation in PV or energy storage applications. This is an important aspect of solar and other renewable systems.

HPS Sentinel Solar Duty Transformers meet or exceed U.S. Department of Energy (DOE 2016) 10 CFR Part 431 efficiency standards and the latest Canadian Energy Efficiency Regulations SOR/2018-201 efficiencies - NRCAN 2019.

*Please note that HPS intends the primary side of transformer to be energized initially regardless of bi-directional use.

**For stand alone (non-utility connected) and multimode systems please contact HPS for a customized Wye-N to Wye-N solution.



Part Number Guide

Example

Family	Appl. Type	Generation	Phase	kVA				Grid/utility side Volt.	Inverter side Volt.	K Rating	Winding Material/ Electrostatic Shield	Temp. Rise & Insul. Class	Enclosure	Sound Level	Special Duty
S	G	3	A	0	0	4	5	B	K	0	A	H	C	0	S

Family:

S - Sentinel

Type:

G - General

K - K Rated

Generation:

3 - Current Designs

Phase (Pri-Sec)¹:

A - 3PH Delta-Wye-N

B - 3PH Wye-N-Delta

D - 3PH Delta-Delta

Y - 3PH Wye-N-Wye-N3²

kVA:

kVA Rating

Grid/Utility Side Voltage:

3PH

B 208D, 208Y/120

D 240D

H 416D

K 480D, 480Y/277

P 600D, 600Y/347

Inverter Side Voltage:

3PH

B 208D or 208Y/120

D 240D

K 480D or 480Y/277

P 600D or 600Y/347

Y 380Y/220V w taps at

400Y, 416Y and 430Y

K Rating:

0 = None

4 = K4

9 = K9

3 = K13

2 = K20 (max. 300 kVA)

Winding Material/Electrostatic Shield:

A - Aluminum

S - AL + Shield

C - Copper

K - CU + Shield

Temperature Rise At Standard 220°C

Insulation Class:

B - 80°C

F - 115°C

G - 130°C

H - 150°C

Enclosure³:

C - Type 3R

Sound Level:

0 = Standard

3 = -3 dB

5 = -5 dB

8 = -8 dB⁴

Special Duty:

S = Solar Duty

¹ Standard configurations winding vector per UL 1560

² HPS standard design for Wye-N-Wye-N solar duty is 3-limb core design. For 4-5 limb design options or tertiary delta contact HPS for customized solution

³ For more enclosure options please contact HPS

⁴ -8dB is available only for 75kVA and above

Standard Features include:

- Three phase from 15 kVA to 1500 kVA (custom ratings available on request)
- Bi-directional statement on the label and instruction manual
- 150°C temp rise with 220°C rise insulation, options for lower temperature rise
- Copper or aluminum windings
- UL Listed and CSA Certified
- Type 3R enclosure standard
- Pre-installed lugs (up to 270 Amps) and bottom entry standard

Optional Features Include:

- Thermal sensing & indication to monitor high load factors and high ambient temperatures
 - Low-Temperature rise options (for hot environments with a higher ambient temperature)
 - K-Factor ratings for non-linear loads
- Contact HPS for additional features





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