Isolation & Filtering Transformers

The Siemens "XES" models are specifically designed to protect sensitive equipment from surges, spikes and line noise. These designs are available with either 208 volt or 480 volt primary and 208Y/120 volt secondary up to 112.5 kVA. All units have spike/surge protection on the primary side and low pass filters on the secondary. The combination of these components and the electrostatic shielding provide excellent transverse mode noise attenuation of 60 db. Additionally the common mode noise attenuation of 120 db will increase protection from line noise, spikes and surges.

Shielded Isolation with Filter Capacitors and Surge Suppression ("XES" Models)

KVA	Catalog Number	Taps①	Temperature Rise	Insulation	Mounting Type③	Drip Shield Required②	Enclosure Style	Optional Modifications
480 Volts Δ Primary, 208Y/120 Volts Secondary								
15	**3F3Y015XESTP1**	Y	150° C	220° C	Floor & Wall	Yes	Ventilated	1, 3, 4, 5
30	**3F3Y030XESTP1**	Y	150° C	220° C	Floor & Wall	Yes	Ventilated	1, 3, 4, 5
45	**3F3Y045XESTP1**	Y	150° C	220° C	Floor & Wall	Yes	Ventilated	1, 3, 4, 5
75	**3F3Y075XESTP1**	Y	150° C	220° C	Floor	Yes	Ventilated	1, 3, 5
112.5⑤	**3F3Y112XESTP1**	Y	150° C	220° C	Floor	Yes	Ventilated	1a, 3, 5
208 Volts Δ Primary, 208Y/120 Volts Secondary								
15	**3B3Y015XESTP1**	Y	150° C	220° C	Floor & Wall	Yes	Ventilated	1, 3, 4, 5
30	**3B3Y030XESTP1**	Y	150° C	220° C	Floor & Wall	Yes	Ventilated	1, 3, 4, 5
45	**3B3Y045XESTP1**	Y	150° C	220° C	Floor & Wall	Yes	Ventilated	1, 3, 4, 5
75	**3B3Y075XESTP1**	Y	150° C	220° C	Floor	Yes	Ventilated	1, 3, 5
112.5⑤	**3B3Y112XESTP1**	Y	150° C	220° C	Floor	Yes	Ventilated	1a, 3, 5

Taps (See page 8-11)

Motor Drive Isolation

Three Phase 60HZ Motor Drive Isolation Transformers

Motor KVA	Catalog H.P.④	Standard Number	Taps①	Rise	Insulation	Mounting Type	Drip Shield Required②	Optional Modifications
7.5	3 & 5	DT ( ) 007	S	135° C	180° C	Floor & Wall	No	1, 2, 3
11	7.5	DT ( ) 011	S	135° C	180° C	Floor & Wall	No	1, 2, 3
14	10	DT ( ) 014	S	150° C	220° C	Floor & Wall	Yes	1, 2, 3, 4, 5, 6
20	15	DT ( ) 020	S	150° C	220° C	Floor & Wall	Yes	1, 2, 3, 4, 5, 6
27	20	DT ( ) 027	S	150° C	220° C	Floor & Wall	Yes	1, 2, 3, 4, 5, 6
34	25	DT ( ) 034	S	150° C	220° C	Floor & Wall	Yes	1, 2, 3, 4, 5, 6
40	30	DT ( ) 040	S	150° C	220° C	Floor & Wall	Yes	1, 2, 3, 4, 5, 6
51	40	DT ( ) 051	S	150° C	220° C	Floor & Wall	Yes	1, 2, 3, 4, 5, 6
63	50	DT ( ) 063	S	150° C	220° C	Floor & Wall	Yes	1, 2, 3, 4, 5, 6
75	60	DT ( ) 075	S	150° C	220° C	Floor	Yes	1, 2, 3, 5, 6
93	75	DT ( ) 093	S	150° C	220° C	Floor	Yes	1, 2, 3, 5, 6
118	100	DT ( ) 118	S	150° C	220° C	Floor	Yes	1, 2, 3, 5, 6
145	125	DT ( ) 145	S	150° C	220° C	Floor	Yes	1, 2, 3, 5, 6
175	150	DT ( ) 175	S	150° C	220° C	Floor	Yes	1, 2, 3, 5, 6
220	200	DT ( ) 220	S	150° C	220° C	Floor	Yes	1, 2, 3, 5, 6
275	250	DT ( ) 275	S	150° C	220° C	Floor	Yes	1, 2, 3, 5, 6
330	300	DT ( ) 330	S	150° C	220° C	Floor	Yes	1, 2, 3, 5, 6
440	400	DT ( ) 440	S	150° C	220° C	Floor	Yes	1, 2, 3, 5, 6
550	500	DT ( ) 550	S	150° C	220° C	Floor	Yes	1, 2, 3, 5, 6
660	600	DT ( ) 660	S	150° C	220° C	Floor	Yes	1, 2, 3, 5, 6

DT ( ) Code	Primary Volts	Secondary Volts
18	208 Delta	208Y/120
20	208 Delta	230Y/133
21	208 Delta	460Y/266
22	230 Delta	230Y/133
24	230 Delta	460Y/266
30	380 Delta	460Y/266
42	460 Delta	230Y/133
44	460 Delta	460Y/266
45	460 Delta	380Y/220
52	575 Delta	230Y/133
54	575 Delta	460Y/266

Motor Drive Isolation Optional Modifications	Catalog Suffix Code
1a. 115° C Rise	F
1b. 80° C Rise	B
2. Electrostatic Shield	ES
3. Copper Windings	C
4. Wall Mounting Brackets	W
5. Drip Shields/Weather Shields	DS
6. Thermal Switches	TS

(Contact Sales office for List Price)

①Actual taps may vary based on volts/turn ratio.
②For outdoor application. Ventilated transformers requiring drip shields are UL listed for outdoor use. No charge when requested at time of initial project order.
③Items marked floor and wall can be wall mounted with optional wall bracket identified with "W" suffix on catalog number.
④Refer selection and application guide for additional information on horsepower, Ampere, KVA ratings and applications. Standard taps varies with design volts/turn ratio.
⑤112.5 KVA XES transformer is only available with copper windings and 115C temp rise.

Distribution Dry Type Transformers

Sentron Power Centers

Selection

Economical Space Saving Package

Siemens Sentron Power Center is a pre-wired combination of a primary breaker disconnect, dry type shielded transformer, secondary breaker disconnect and a secondary power panel all in one convenient package.

You save time, space and money by not having to individually assemble, mount and wire these components. Simply add the branch and you're ready to go.

UL-3R Enclosures

All Sentron Power Center enclosures are UL-3R listed for indoor and outdoor use.

Transformer Assembly

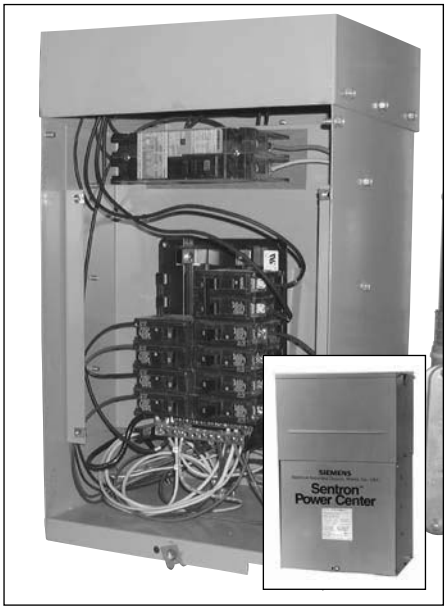
Siemens totally encapsulated distribution transformers are designed for general purpose indoor/outdoor operation.

Sentron Power Centers can be installed in a wide variety of atmospheric and environmental conditions. A 180°C, UL recognized insulation system is used with a 115°C temperature rise.

Sentron Power Center units are electrostatically shielded to provide transient voltage protection at no extra cost. All units have 2-5% FCBN taps.

Panel Assembly

The power panel assembly will accommodate one-inch, 1, 2 or 3-pole, common trip, duplex secondary branch circuit breakers, Type Q and QT as well as ground fault circuit breakers. Per UL and NEC requirements, the Sentron Power Center assembly comes fully equipped with primary and secondary main circuit breakers. Branch circuit breakers can be obtained from our local distributor once you have established your branch circuit requirements. All Sentron Power Centers are UL listed for service entrance.



KVA	Catalog Number④⑧⑨	Maximum Secondary Circuits① 1" Wide 120V (1-Pole)	1/2" Wide 120V (1-Pole)	2" Wide 240V (2-pole)	Interior Number Reference	Approximate Dimensions (in inches) Height	Width	Depth	Approximate Net Weight (lbs.)
480 Volts Primary, 240/120 Volts Secondary — Single Phase② — Sentron Power Centers⑤									
5.0	**1LPC005**	8	16	4	I1224L1100CU	32.13	13.25	7.63	120
7.5	**1LPC007**	8	16	4	I1224L1100CU	32.13	15.88	11.00	160
10.0	**1LPC010**	8	16	4	I1224L1100CU	34.38	15.88	11.00	185
15.0	**1LPC015**	12	24	6	I1224L1125CU	34.38	17.13	12.38	240
25.0	**1LPC025**	20	40	10	I2440L1200CU	41.88	17.88	13.50	330

KVA	Catalog Number④⑧⑨	Maximum Secondary Circuits① 1" Wide 120V (1-Pole)	1/2" Wide 120V (1-Pole)	3" Wide 208V (3-pole)	Interior Number Reference	Approximate Dimensions (in inches) Height	Width	Depth	Approximate Net Weight (lbs.)
480 Volts Δ Primary, 208Y/120 Volts Secondary — Three Phase③ — Sentron Power Centers⑤									
9.0	**3LPC009**	12	24	4	PI1836L3200CUB	33.75	22.13	7.63	255
15.0	**3LPC015**	12	24	4	PI1836L3200CUB	35.13	22.13	12.38	385
22.5	**3LPC022**	18	36	6	PI2442L3200CUB	38.25	30.25	13.38	535
30.0	**3LPC030**	24	42	8	PI3054L3200CUB	43.75	33.00	13.75	680

Circuit Breaker Data for Sentron Power Centers

480 Volts to 240/120 Volts — Single Phase

KVA	480 Volts Primary Breaker①⑥⑦	240/120 Volts Secondary Main	Maximum Rating of Secondary Breakers
5.0	ED42B025L (25A)	Q225 (25A)	20 Amps
7.5	ED42B025L (25A)	Q240 (40A)	30 Amps
10.0	ED42B035L (35A)	Q250 (50A)	40 Amps
15.0	ED42B050L (50A)	Q270 (70A)	60 Amps
25.0	ED42B090L (90A)	Q2125 (125A)	100 Amps

480 Volts Δ to 208Y/120 Volts — Three Phase

KVA	480 Volts Primary Breaker①⑥⑦	208Y/120 Volts Secondary Main	Maximum Rating of Secondary Breakers
9.0	ED43B025L (25A)	Q330 (30A)	25 Amps
15.0	ED43B040L (40A)	Q350 (50A)	40 Amps
22.5	ED43B070L (70A)	Q370 (70A)	60 Amps
30.0	ED43B090L (90A)	Q3100 (100A)	80 Amps

① Primary breaker has lineside lug for customer connection.
② Single Phase – 18,000 Amps RMS Symmetrical Interrupting Capacity.
③ Three Phase – 18,000 Amps RMS Symmetrical Interrupting Capacity.
④ Sentron Power Centers are NEMA 3R for outdoor application and may be ordered with "SS" suffix for 304 stainless steel enclosure.
⑤ Secondary branch breakers are not included and must be ordered separately.
⑥ Primary and secondary main breakers are included and are factory installed.
⑦ ED frame breakers furnished are rated 18000 AIC and are sufficient for fault current of transformer. If higher AIC rating is required by spec, the ED can be changed in the field to HED 4 (42000 AIC) or HHED6 (65000 AIC).
⑧ 1LPC005 and 3LPC009 are copper wound.
⑨ Available with Stainless Steel NEMA 3R enclosures by adding catalog number suffix "SS".

NEMA Premium® Efficiency Transformer

Selection

The NEMA Premium Efficiency Transformer Program will help utilities, commercial buildings, and industrial plants incorporate super high-efficiency electrical transformers into their operations. NEMA originally set the standard for the efficiency of various types of distribution transformers with the publication of NEMA TP 1-2002 Guide for Determining Energy Efficiency for Distribution Transformers, which was later adopted by the U.S. Department of Energy (DOE) as the national energy-efficiency rule for low-voltage dry-type distribution transformers. The new Siemens NEMA Premium Efficiency Transformer designation requires 30 percent fewer losses than existing DOE regulations (10 CFR 431) for low-voltage dry-type distribution transformers.

The new transformers are available in all standard kVA ratings, optional K4 or K13 ratings, Aluminum or copper windings, and 80, 115, or 150 degree C temperature rise.

NEMA Premium Transformer Efficiencies

Single-Phase		Three-Phase	
kVA	Efficiency (%)	kVA	Efficiency (%)
15	98.39%	15	97.90%
25	98.60%	30	98.25%
37.5	98.74%	45	98.39%
50	98.81%	75	98.60%
75	98.95%	112.5	98.74%
100	99.02%	150	98.81%
167	99.09%	225	98.95%
250	99.16%	300	99.02%
333	99.23%	500	99.09%
		750	99.16%
		1000	99.23%

Estimated Annual Transformer Energy Savings

	15 kVA		30 kVA		45 kVA		75 kVA	
	NEMA TP1	NEMA Premium	NEMA TP1	NEMA Premium	NEMA TP1	NEMA Premium	NEMA TP1	NEMA Premium
No Load Losses (kW)	0.085	0.073	0.155	0.100	0.175	0.135	0.260	0.220
Load Losses (kW)	0.90	0.32	1.33	0.69	2.03	1.00	2.90	1.22
Energy Cost/Month ($) =	$24.21	$11.99	$37.98	$21.21	$53.21	$30.01	$76.94	$41.03
Energy Savings/Year ($) =	$147		$201		$278		$431	

Note 1: Based on 730 Average Hours/Month.
Note 2: Transformer data: Standard 3F3Y units. Example catalog number 3F3Y015TP1NP
Note 3: Cost of Electricty used is the 2009 National Average Commercial Rate (10.7 cents/KWhr).
Note 4: At 50% Average Load.

Sentron Harmonic Mitigating Transformers (HM1 & HM2)

Description

The Sentron Harmonic Mitigating Transformers (HMTs) are designed to meet the needs of modern power distribution systems that contain a large percentage of non-linear equipment that produces harmonics. Some examples of this type of equipment are computers, printers, fax machines, scanners, copiers, uninterruptible power supplies, ballast and variable frequency drives (VFD). This type of equipment generates harmonic voltages and currents because they contain AC to DC power conversion rectifiers. Harmonic voltages and currents can cause a variety of problems ranging from poor power factor, voltage distortion, capacitor resonance and motor failures to overloaded transformers and conductors.

The Sentron HMTs are specially designed to operate under high non-linear load conditions and have the additional benefit of improving the overall power system reliability.

Application

One of the most effective ways to eliminate power system harmonics is to use a technique known as "phase shifting." In this method power system harmonics are eliminated by pairing together harmonics that have 180° relative angular displacement, which causes them to cancel one another out. This can be accomplished by a variety of means:

Single Output Harmonic Mitigating Transformer (0° or -30° primary-secondary angular displacement)

- The primary of this transformer has a delta connection and its secondary has a special double winding connection. Although there is only one secondary three phase output, the 3rd, 9th and 15th harmonic currents are prevented from circulating in the primary windings by canceling their magnetic fluxes at low impedance with the double winding secondary, reducing voltage distortions to the loads.
- When two transformers with this type of connection, 0° and -30° displacement, are used in parallel, the 3rd, 9th and 15th harmonic currents are canceled as previously described, and additionally the 5th and 7th harmonic currents are cancelled in the electrical supply common to both transformers due to their relative 30° phase shift.
- If a single harmonic mitigating transformer (0°) is used in an existing or new system utilizing standard delta-wye transformers (-30°), the 5th and 7th harmonic currents originating from the HMT transformer (0°) will attempt to cancel the 5th and 7th harmonic currents originating from the standard delta-wye transformer (-30°). This reduces the overall 5th and 7th harmonics present in the system, with the actual reduction dependent on the magnitudes of the secondary loads.

Double-Output Harmonic Mitigating Transformer (0° and -30° or -15° and -45° primary-secondary angular displacement)

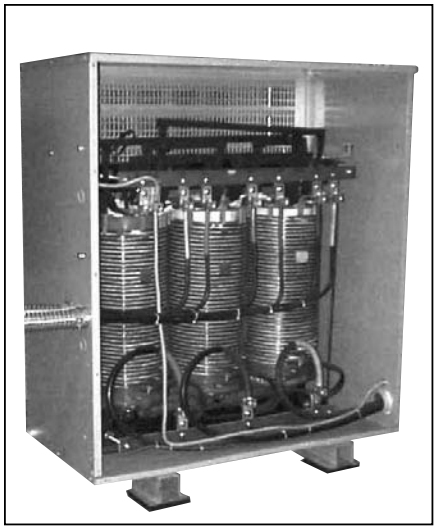
- The primary of this transformer has a delta connection and its secondary has double-output, special double winding connections with 30° phase shift between outputs. This arrangement cancels the 3rd, 5th, 7th, 9th, and 15th harmonics at very low impedance on the secondary side. This greatly improves voltage distortion for the loads and the primary power factor. The advantage of this arrangement is that the reductions of harmonic currents are achieved with one transformer creating a 12 pulse load.
- If two of these transformers are used, with the primaries of each phase shifted 15° with respect to one another, then cancellation of harmonics up to the 19th are achievable creating a 24 pulse load.

Benefits

Elimination of undesirable harmonics by using the Siemens Sentron HMTs is an effective solution to the power quality problems encountered by today's power system professionals. By treating the harmonics at their source, using advanced technology, installation problems can be avoided and overall system reliability improved. The Sentron HMT product line provides many far reaching benefits such as lower operating cost, improved operating efficiency, reduced down-time due to outages caused by nuisance tripping, and increased equipment life due to low voltage distortions.

Design and Construction Features

The Sentron Harmonic Mitigating Transformers comply with all applicable ANSI/IEEE standards including C57.12.91, C57.96, C57.110, CSA # C22.2 No. 47 (CUL), UL506, UL1561 as well as NEMA ST-20. The design life is 25 years at 130 degree C rise, 30 years at 115C rise and 40 years for 80C rise models. Approvals and listings include UL, CSA. with CE approval available when requested. The Sentron HMTs have capability up to the load capability up to K-20, which is achieved by harmonic cancellations in the secondary and low flux density design for protection against heat in place of design enlargement protection only. Copper coil windings with full width copper foil electrostatic shield are standard and additional shield options are available for higher noise attenuation requirements. All HMTs have 130C rise with optional 115C and 80C winding rise designs available. All designs include vacuum impregnated polyester resin encapsulation of windings and NEMA 3R enclosures. A neutral sized at 200% of the ampacity of the secondary phase conductors for extra protection against triplens and unbalanced single phase loads. The Sentron HMT designs have TP1 energy efficient rating equal to that of a non K-Factor rated transformer. Siemens HMT designs have TP1 efficiency levels at 35% load @ ref temp. 75 degree C and also retain TP1 efficiency levels at 65% load @ reference temperature 85C. A ten-year pro-rated warranty with standard liability limitations applies to all Sentron HMTs.



Transformers

Sentron Harmonic Mitigating Transformers (HM1 & HM2)

Selection

Catalog Number Coding:

Single output (1 secondary) = HM1,
Double output (2 secondaries) = HM2.
Phase Shift Options: HM1 followed by > (00) or (30) degree.
HM2 > (03) for 0 & 30 or (15) for 15 & 45 degree lagging.
HMT, 480 Volt Primary 208Y/120 Volt Secondary (3F3)–130C (standard), 115C and 80C Winding Rise displayed on this page.HMTs are also available with 480–480Y/277 (3F5), 208–208Y/120 (3B3), 208–480Y/277 (3B5).

Standard Features Include:

- K-20 Load profile rating.
- TP1 Efficiencies @ 35% through 65% load.
- (C) Copper windings.
- (ES) Electrostatic shield.
- 130 C Winding rise.

KVA	130C (std.) Rise HMT Catalog Number ①	115C Rise HMT Catalog Number ①	80C Rise HMT Catalog Number ①	Secondary Configuration		Enclosure Style	Optional HMT Modifications
				Outputs	Phase Shift		
15	**3F3Y015GHM100**	**3F3Y015FHM100**	**3F3Y015BHM100**	1	Zero Degree	Vented	A,B,C,D,E,F,G,H
15	**3F3Y015GHM130**	**3F3Y015FHM130**	**3F3Y015BHM130**	1	30 Deg Lagging	Vented	A,B,C,D,E,F,G,H
15	**3F3Y015GHM203**	**3F3Y015FHM203**	**3F3Y015BHM203**	2	0 & 30 Lagging	Vented	A,B,C,D,E,F,G,H
15	**3F3Y015GHM215**	**3F3Y015FHM215**	**3F3Y015BHM215**	2	15 & 45 Lagging	Vented	A,B,C,D,E,F,G,H
30	**3F3Y030GHM100**	**3F3Y030FHM100**	**3F3Y030BHM100**	1	Zero Degree	Vented	A,B,C,D,E,F,G,H
30	**3F3Y030GHM130**	**3F3Y030FHM130**	**3F3Y030BHM130**	1	30 Deg Lagging	Vented	A,B,C,D,E,F,G,H
30	**3F3Y030GHM203**	**3F3Y030FHM203**	**3F3Y030BHM203**	2	0 & 30 Lagging	Vented	A,B,C,D,E,F,G,H
30	**3F3Y030GHM215**	**3F3Y030FHM215**	**3F3Y030BHM215**	2	15 & 45 Lagging	Vented	A,B,C,D,E,F,G,H
45	**3F3Y045GHM100**	**3F3Y045FHM100**	**3F3Y045BHM100**	1	Zero Degree	Vented	A,B,C,D,E,F,G,H
45	**3F3Y045GHM130**	**3F3Y045FHM130**	**3F3Y045BHM130**	1	30 Deg Lagging	Vented	A,B,C,D,E,F,G,H
45	**3F3Y045GHM203**	**3F3Y045FHM203**	**3F3Y045BHM203**	2	0 & 30 Lagging	Vented	A,B,C,D,E,F,G,H
45	**3F3Y045GHM215**	**3F3Y045FHM215**	**3F3Y045BHM215**	2	15 & 45 Lagging	Vented	A,B,C,D,E,F,G,H
75	**3F3Y075GHM100**	**3F3Y075FHM100**	**3F3Y075BHM100**	1	Zero Degree	Vented	A,B,C,D,E,F,G,H
75	**3F3Y075GHM130**	**3F3Y075FHM130**	**3F3Y075BHM130**	1	30 Deg Lagging	Vented	A,B,C,D,E,F,G,H
75	**3F3Y075GHM203**	**3F3Y075FHM203**	**3F3Y075BHM203**	2	0 & 30 Lagging	Vented	A,B,C,D,E,F,G,H
75	**3F3Y075GHM215**	**3F3Y075FHM215**	**3F3Y075BHM215**	2	15 & 45 Lagging	Vented	A,B,C,D,E,F,G,H
112.5	**3F3Y112GHM100**	**3F3Y112FHM100**	**3F3Y112BHM100**	1	Zero Degree	Vented	A,B,C,D,E,F,G,H
112.5	**3F3Y112GHM130**	**3F3Y112FHM130**	**3F3Y112BHM130**	1	30 Deg Lagging	Vented	A,B,C,D,E,F,G,H
112.5	**3F3Y112GHM203**	**3F3Y112FHM203**	**3F3Y112BHM203**	2	0 & 30 Lagging	Vented	A,B,C,D,E,F,G,H
112.5	**3F3Y112GHM215**	**3F3Y112FHM215**	**3F3Y112BHM215**	2	15 & 45 Lagging	Vented	A,B,C,D,E,F,G,H
150	**3F3Y150GHM100**	**3F3Y150FHM100**	**3F3Y150BHM100**	1	Zero Degree	Vented	A,B,C,D,E,F,G,H
150	**3F3Y150GHM130**	**3F3Y150FHM130**	**3F3Y150BHM130**	1	30 Deg Lagging	Vented	A,B,C,D,E,F,G,H
150	**3F3Y150GHM203**	**3F3Y150FHM203**	**3F3Y150BHM203**	2	0 & 30 Lagging	Vented	A,B,C,D,E,F,G,H
150	**3F3Y150GHM215**	**3F3Y150FHM215**	**3F3Y150BHM215**	2	15 & 45 Lagging	Vented	A,B,C,D,E,F,G,H
225	**3F3Y225GHM100**	**3F3Y225FHM100**	**3F3Y225BHM100**	1	Zero Degree	Vented	A,B,C,D,E,F,G,H
225	**3F3Y225GHM130**	**3F3Y225FHM130**	**3F3Y225BHM130**	1	30 Deg Lagging	Vented	A,B,C,D,E,F,G,H
225	**3F3Y225GHM203**	**3F3Y225FHM203**	**3F3Y225BHM203**	2	0 & 30 Lagging	Vented	A,B,C,D,E,F,G,H
225	**3F3Y225GHM215**	**3F3Y225FHM215**	**3F3Y225BHM215**	2	15 & 45 Lagging	Vented	A,B,C,D,E,F,G,H
300	**3F3Y300GHM100**	**3F3Y300FHM100**	**3F3Y300BHM100**	1	Zero Degree	Vented	A,B,C,D,E,F,G,H
300	**3F3Y300GHM130**	**3F3Y300FHM130**	**3F3Y300BHM130**	1	30 Deg Lagging	Vented	A,B,C,D,E,F,G,H
300	**3F3Y300GHM203**	**3F3Y300FHM203**	**3F3Y300BHM203**	2	0 & 30 Lagging	Vented	A,B,C,D,E,F,G,H
300	**3F3Y300GHM215**	**3F3Y300FHM215**	**3F3Y300BHM215**	2	15 & 45 Lagging	Vented	A,B,C,D,E,F,G,H
500	**3F3Y500GHM100**	**3F3Y500FHM100**	**3F3Y500BHM100**	1	Zero Degree	Vented	C,D,E,F,G,H
500	**3F3Y500GHM130**	**3F3Y500FHM130**	**3F3Y500BHM130**	1	30 Deg Lagging	Vented	C,D,E,F,G,H
500	**3F3Y500GHM203**	**3F3Y500FHM203**	**3F3Y500BHM203**	2	0 & 30 Lagging	Vented	C,D,E,F,G,H
500	**3F3Y500GHM215**	**3F3Y500FHM215**	**3F3Y500BHM215**	2	15 & 45 Lagging	Vented	C,D,E,F,G,H

Optional Modifications Table for HMTs			
	Sound Level	**Thermal Sensors 170° C= (TS7), 185° C= (TS8) or 200° C= (TS0)**	
A	LN3= (3dB below NEMA standard)	H	TS7 = 1 sensor center coil
B	LN5= (5dB below NEMA standard)	H	TS72 = 2 sensors center coil
	Attenuation—Single shield—60dB Common Mode Std.	H	TS76 = 6 sensors, (2) on each coil
C	ES2= Double shield—80dB Common Mode >	H	TS8 = 1 sensor center coil
D	ES3= Double shield & TVSS—120dB Common >	H	TS82 = 2 sensors center coil
	Filtering & Attenuation	H	TS86 = 6 sensors, (2) on each coil
E	TV= Secondary side TVSS (90kA Standard) with common mode noise attenuation	H	TS0 = 1 sensor center coil
F	TB= Terminal Block	H	TS02 = 2 sensors center coil
G	NP= Super Energy Efficient (HM1NP & HM2NP)	H	TS06 = 6 sensors, (2) on each coil

① Contact Sales Office for pricing.