



TTH SERIES

Insulation for clinical electrical installations · Input 400 V · Output 230 V

Definition and applications

Our TTH series is manufactured in accordance with the IEC/EN 61558-2-15 standard, focused on safety in clinical installations, and guaranteeing patient safety.



TTHX

- IP00 protection rating.
- Power from 1 kVA to 10 kVA.
- Total impregnated in anti-flash varnish.
- Hoisting elements included.



TTH

- **Encapsulated in resin**
- IP20 protection rating.
- Power from 0.40 kVA to 400 kVA.
- Protection against damp, saline and corrosive environments.
- Greater resistance to surge currents.
- Greater resistance to transient harmonics.
- Greater mechanical resistance to undesirable vibrations.
- Uniform heat dissipation.
- Hoisting elements included.

Manufacturing characteristics

- All the transformers are dipped in anti-flash varnish and then compacted in the furnace. This process increases the insulation grade, reduces noise and provides anti-moisture, waterproofed protection.
- All the connection terminals are made of copper. For transformers with aluminium coils, internal bimetallic AL-CU connections are made by welding with filling and sealing material to ensure a safe, long lasting connection.
- All the transformers are checked automatically one by one and the compliance test report is created in accordance with the corresponding standard.



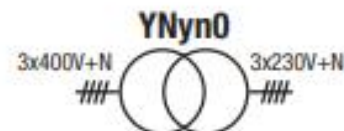
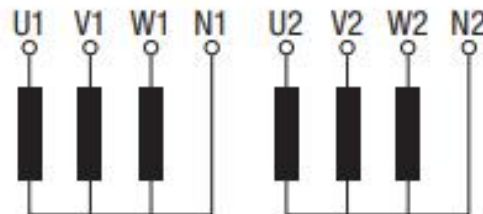
TTHW

- IP23 rating (IK08).
- Power from 1 kVA to 10 kVA.
- Metal box painted with RAL7035 polyester resin.
- High resistance to corrosion.
- Cable outlet with cable gland.
- Hoisting elements included.
- Detachable top and front cover.
- Cable outlet with cable gland.

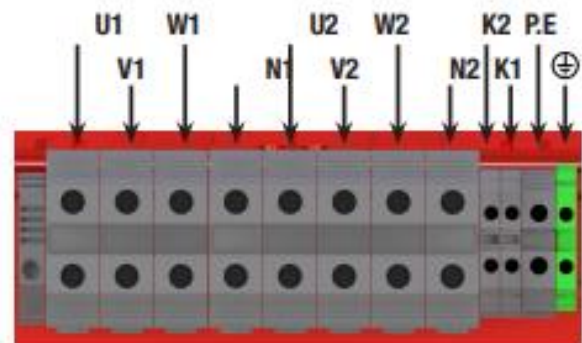
Technical features - standard model

Power	1 kVA to 10 kVA
Standard voltage	Input 400 V and N // Output 230 V and N.
Standard frequency	50-60 Hz
Connection unit	YNyn0
Windings	Class HC-200 °C
Insulators	Class F - 155 °C <small>*More information in Technical Appendix (T.A.1)</small>
Class	I
Altitude	1000 m
Enclosure colour	RAL 7035
IP rating	IP00 (TTHX)
	IP20 (TTH)
	IP23 (TTHW)
IK rating	IK08 (TTHW)
Paint class (ISO 12944)	C3 (TTHW)
Room temperature	45 °C
Standards	IEC/EN 61558-2-15, CE
Test voltage	4.5 kV (1 min., 50 Hz)
Inrush	< 12 In
Ucc	≤ 4 %
K factor	4
Operation	Continuous
Cooling	AN (TTHX / TTH) - ANAN (TTHW)

Electrical diagram



Connection



- U1 = 400 V
- V1 = 400 V
- W1 = 400 V
- N1 = Neutral 1
- U2 = 230 V
- V2 = 230 V
- W2 = 230 V
- N2 = Neutral 2
- K1 = Kilxon 150 °C thermostat for first coil
- K2 = Kilxon 150 °C thermostat for second coil
- P.E = electrostatic shield

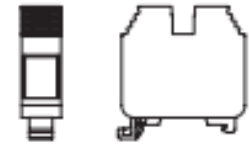


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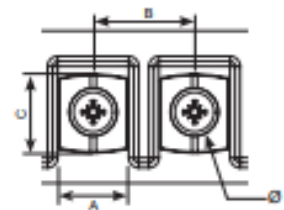
Terminal types

Terminals	Maximum cross-section conductor mm ²	Maximum tightening torque		TTHX-TTHW	
		N-m	Lb-in	Power kVA	
				From	To
Terminal 4	6	0.5	4.4	1	2
Terminal 10	16	1.2	10.6	3.15	4
Terminal 16	25	1.2	10.6	5	6
Terminal 35	50	2.5	22.1	8	10



Terminal 4 / 10 / 16 / 35

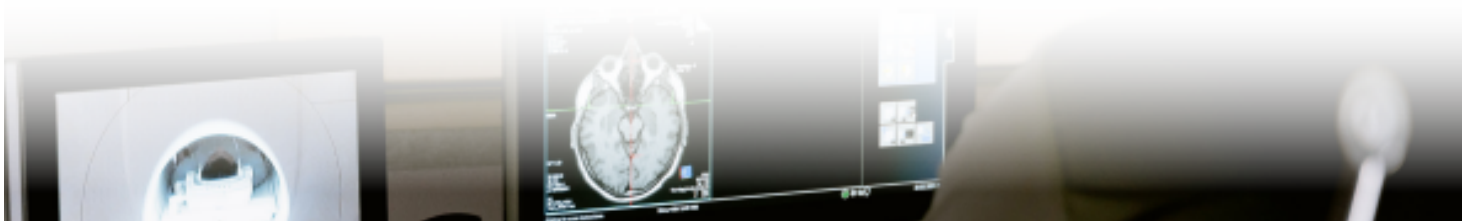
Terminals	External mm				Maximum cross-section conductor mm ²	Maximum tightening torque		TTH	
	A	B	C	Ø		N-m	Lb-in	Power kVA	
								From	To
Terminal M5	15	18.5	14	M5	-	1.1	9.7	1	6.3
Terminal 35	-	-	-	-	50	2.5	22.1	8	10



Terminal M5

Theoretical data - standard model

Power kVA	Reference	Insulation class	Current A		Protections A		Noise dB	Cable gland	
			Input	Output	Input	Output		Ø max. (mm)	Quantity
TTHX									
1	TTHX1	F	1.4	2.5	3 (D/Am)	2.5 (C/pG)	≤45	-	-
2	TTHX2	F	2.9	5.0	10 (D/Am)	5 (C/pG)	≤45	-	-
3.15	TTHX3.15	F	4.5	7.9	10 (D/Am)	7 (C/pG)	≤45	-	-
4	TTHX4	F	5.8	10.0	16 (D/Am)	10 (C/pG)	≤45	-	-
5	TTHX5	F	7.2	12.6	16 (D/Am)	12 (C/pG)	≤45	-	-
6.3	TTHX6.3	F	9.1	15.8	20 (D/Am)	12 (C/pG)	≤45	-	-
8	TTHX8	F	11.5	20.1	25 (D/Am)	20 (C/pG)	≤45	-	-
10	TTHX10	F	14.4	25.1	32 (D/Am)	25 (C/pG)	≤45	-	-
TTHW									
1	TTHW1	F	1.4	2.5	3 (D/Am)	2.5 (C/pG)	≤45	14	2
2	TTHW2	F	2.9	5.0	10 (D/Am)	5 (C/pG)	≤45	14	2
3.15	TTHW3.15	F	4.5	7.9	10 (D/Am)	7 (C/pG)	≤45	18	2
4	TTHW4	F	5.8	10.0	16 (D/Am)	10 (C/pG)	≤45	18	2
5	TTHW5	F	7.2	12.6	16 (D/Am)	12 (C/pG)	≤45	25	4
6.3	TTHW6.3	F	9.1	15.8	20 (D/Am)	12 (C/pG)	≤45	25	4
8	TTHW8	F	11.5	20.1	25 (D/Am)	20 (C/pG)	≤45	25	4
10	TTHW10	F	14.4	25.1	32 (D/Am)	25 (C/pG)	≤45	25	4
TTH									
1	TTH1	F	1.4	2.5	3 (D/Am)	2.5 (C/pG)	≤45	-	-
2	TTH2	F	2.9	5.0	10 (D/Am)	5 (C/pG)	≤45	-	-
3.15	TTH3.15	F	4.5	7.9	10 (D/Am)	7 (C/pG)	≤45	-	-
4	TTH4	F	5.8	10.0	16 (D/Am)	10 (C/pG)	≤45	-	-
5	TTH5	F	7.2	12.6	16 (D/Am)	12 (C/pG)	≤45	-	-
6.3	TTH6.3	F	9.1	15.8	20 (D/Am)	12 (C/pG)	≤45	-	-
8	TTH8	F	11.5	20.1	25 (D/Am)	20 (C/pG)	≤45	-	-
10	TTH10	F	14.4	25.1	32 (D/Am)	25 (C/pG)	≤45	-	-





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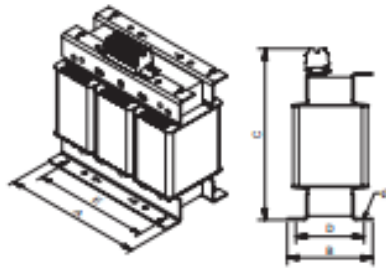
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Measurements

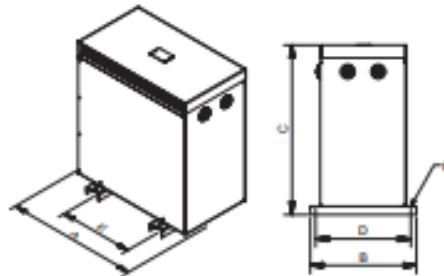
Power kVA	Reference	External dimensions mm			Fastening elements mm			Weight kg
		A	B	C	D	E	∅	
TTHX								
1	TTHX1	240	108	253	80	200	9	16
2	TTHX2	240	128	253	100	200	9	22
3.15	TTHX3.15	300	154	303	145	250	9	36
4	TTHX4	300	164	303	155	250	9	41
5	TTHX5	360	144	353	122	300	11	56
6.3	TTHX6.3	360	164	353	142	300	11	68
8	TTHX8	360	240	353	172	300	11	71
10	TTHX10	360	270	353	202	300	11	87

Power kVA	Reference	External dimensions mm			Fastening elements mm			Weight kg
		A	B	C	D	E	∅	
TTHW								
1	TTHW1	315	230	315	205	200	6	20.3
2	TTHW2	315	230	315	205	200	6	28.2
3.15	TTHW3.15	385	260	384	245	250	6	40.8
4	TTHW4	385	260	384	245	250	6	45.2
5	TTHW5	458	340	500	300	300	12	61
6.3	TTHW6.3	458	340	500	300	300	12	73
8	TTHW8	458	340	500	300	300	12	76
10	TTHW10	458	340	500	300	300	12	92

TTHX IP00

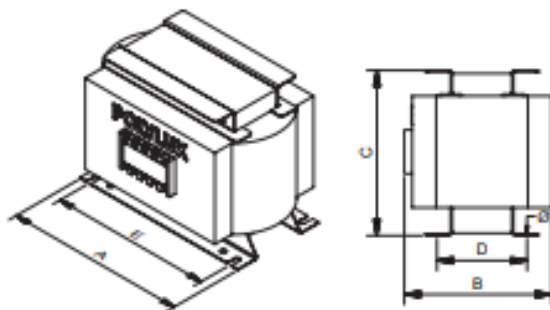


TTHW IP23

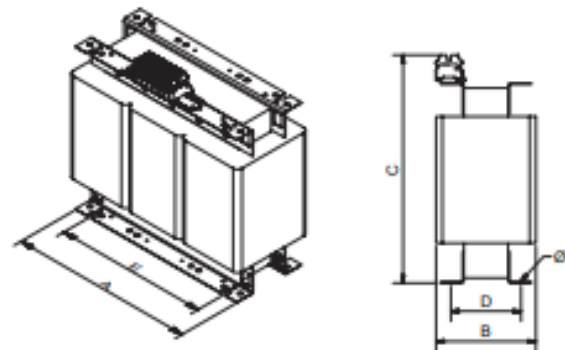


Sectioned

Power kVA	Reference	External dimensions mm			Fastening elements mm			Weight kg
		A	B	C	D	E	∅	
TTH								
1	TTH1	280	138	205	80	250	9	24.4
2	TTH2	280	158	205	100	250	9	31.1
3.15	TTH3.15	340	200	255	310	126	9	42.3
4	TTH4	340	205	255	310	136	9	46.8
5	TTH5	378	158	353	122	300	11	59
6.3	TTH6.3	378	178	353	142	300	11	65
8	TTH8	378	198	353	162	300	11	81
10	TTH10	378	228	353	192	300	11	99



Up to 6.3 kVA



From 8 kVA



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Feature plate structure

