H-Class Insulation

Non-Ventilated Resin-Encapsulated Transformers

ET Series

Introduction

Overload & Over-Temperature Protection Devices Available

In 1992, CIC became the first manufacturer in Taiwan to successfully produce a non-ventilated low-voltage transformer. To create this product, the main transformer components were placed in a metal enclosure and then insulated — encapsulated — with an epoxy resin mixture. The heat dissipation allowed by the solidified epoxy resin mixture and by the surface area of the metal enclosure made the compact size of the transformer possible. These transformers also had a reduced noise level — compared to ordinary dry-type or cast-resin transformers — and could be installed in a number of different ways, facilitating the economical use of space. The fire-resistant design further enabled these products to widely replace the oil-immersed transformers and tape-insulated dry-type transformers that were frequently used in large buildings and shopping centers at the time. This non-ventilated LV transformer has since been enhanced with new features, including temperature monitoring and overload protection, and has become even more widely adopted. Ideal for commercial, office, medical, and residential buildings alike, these transformers are installed also in Taipei 101, Taiwan's tallest building.

Features

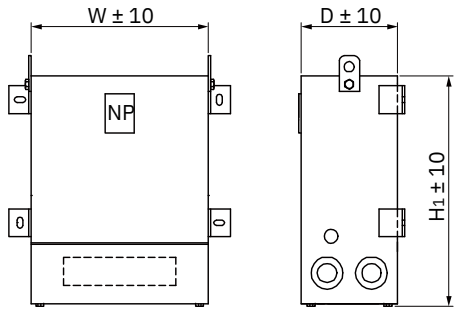
- Transformer cores made with high-permeability cold-rolled grain-oriented silicon steel sheets (CRGO) for high efficiency.
- Windings are made with copper or aluminum conductors.
- H-Class insulation for high safety and reliability.
- Self-extinguishing, low-noise, and protected against moisture, dust, and pests.
- Durable IP20 enclosure helps prevent electric shocks.
- Compact, lightweight, and can be installed in multiple ways.
- Available in Regular Type and "Silent" Type (for the lowest sound levels).
- Optional SPD for protection against lightning.
- Optional protective devices for overload and over-temperature protection.

Specifications

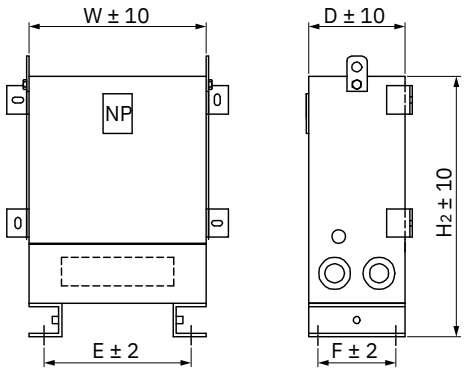
- Standards: IEC (or specific national standards by request)
- Number of Phases: 3 (single-phase products available upon request).
- Frequency: 50 or 60Hz
- Primary Voltage: ≤ 480V
- Secondary Voltage: 190Y/110V or 208Y/120V
- Connection Type: Δ–Y, or as specified by customers
- Capacity: 3 ~ 75 kVA
- Cooling Method: Air Natural (AN)
- Other specifications or custom requirements available.

Drawings and Selection Tables

(Unit: mm)



(Horizontal Suspension)



(Mounting on Floor/Wall)

■ Regular Type (Type ET)

Explanation: “C” denotes models with copper windings; “A” refers to those with aluminum windings.

Capacity (kVA)	W (mm)		D (mm)		H_1 (mm)		H_2 (mm)		E (mm)		F (mm)		Sound Level (dB)		Approx. Weight (kg)	
	C	A	C	A	C	A	C	A	C	A	C	A	C	A	C	A
3	240	240	150	150	395	395	350	350	190	190	100	100	40	40	45	45
5	290	290	165	165	425	425	380	380	240	240	115	115			50	50
7.5	290	360	165	165	455	520	410	475	240	310	115	115			50	70
10	330	360	175	180	495	555	450	510	280	310	125	130			80	85
15	330	420	200	215	525	580	480	535	280	370	150	165			95	110
20	375	435	205	215	615	660	570	615	325	385	155	165			120	140
25	420	435	230	225	615	675	570	630	370	385	180	175			140	155
30	420	435	250	230	635	700	590	655	370	385	200	180			160	165
37.5	480	520	250	250	750	750	-	-	430	470	200	200	45	45	265	240
50	510	600	260	300	800	750	-	-	460	550	210	250			325	325
75	560	700	290	340	850	850	-	-	510	650	240	290	50	50	425	450

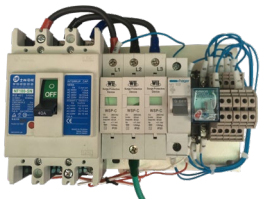
■ Silent Type (Type ET-S)

Explanation: “C” denotes models with copper windings; “A” refers to those with aluminum windings.

Capacity (kVA)	W (mm)		D (mm)		H_1 (mm)		H_2 (mm)		E (mm)		F (mm)		Sound Level (dB)		Approx. Weight (kg)	
	C	A	C	A	C	A	C	A	C	A	C	A	C	A	C	A
3	240	240	150	150	395	385	350	340	190	190	100	100	35	35	45	45
5	290	290	165	165	425	425	380	380	240	240	115	115			50	50
7.5	290	390	175	160	455	485	410	440	240	340	125	110			55	70
10	330	360	190	195	495	555	450	510	280	310	140	145			85	95
15	345	420	210	215	525	600	480	555	295	370	160	165			115	115
20	375	435	210	215	615	660	570	615	325	385	160	165			125	145
25	430	435	240	225	615	675	570	630	380	385	190	175			150	160
30	420	435	260	230	635	725	590	680	370	385	210	180			175	175

Note: The data above are given as examples only. Please contact us with your special requests and for final specifications.

Overload and Over-Temperature Protection Devices (Optional)

Type	OHA-1	OHA-2	OHTA
Description	Device for Overload and Over-Temperature Notification and Automatic Reset	Two-Stage Notification and Automatic Reset Device for Overload and Over-Temperature Protection	Automatic Reset and Switch-Off Device for Overload, Over-Temperature, and Surge Protection
Appearance			 Without Enclosure  With Enclosure
Dimensions	80W x 155L x 32H (mm)		Without Enclosure (with Base Board) 210W x 130L x 96H (mm) With Enclosure 300W x 300L x 105H (mm) (For reference only. Product appearance and dimensions vary according to component configurations.)
Protection Function	Protection against over-temperature or overload situations: • short circuit on the load side • total capacity of transformer exceeded • one of the phases overloaded due to unbalanced condition of three phases		
Detection and Action	Device signals can prompt users to timely inspect or redistribute the load between the phases (each of the phases has a corresponding light which can signal independently). Stage 1 (Model OHA-2 only): Warning light(s) will turn on as the transformer approaches over-temperature or overload (at any of the phases). Stage 2: Actual over-temperature or overload (at any of the phases) is notified by a light signal (Model OHA-1) or sound signal (Model OHA-2).		Device will switch off the transformer at overload or over-temperature to allow timely inspection and to prevent damage of the transformer. Surge protection devices (SPD) are optional.
Installation	Signal devices can be mounted directly on the transformer or at a remote location through wired connection.		Installed with an enclosure, or directly mounted inside the distribution panel.

Note: For wiring diagrams, please refer to the full brochure of these protective devices, provided upon request.