3 phase high frequency power transformer – PTB4240

Special Features:

- Rated output power: 13.5 kVA
- Rated input voltage, RMS: 430 V
- Rated output voltage, RMS: 26 V_{RMS}
- Nominal secondary current, RMS: 440A
  (110A per secondary winding)
- Rated frequency: 30 kHz
- Scalability of the product up to 50 kVA
  (for frequency range from 30-100 kHz)
- Compliance:
  - EN 61558-1:2019
  - EN 61558-2-16:2021
  - UL 1561:2023
  - RoHS and REACH
- Low profile – rack mounting ready
- Maximum operating ambient temperature: 40°C

Typical Applications:

- 3 phase Dual Active Bridge converters
- 3 phase resonant converters
- Power supplies based on 3 phase converters

For samples or custom solutions please contact directly:
inquiry@sma-magnetics.com

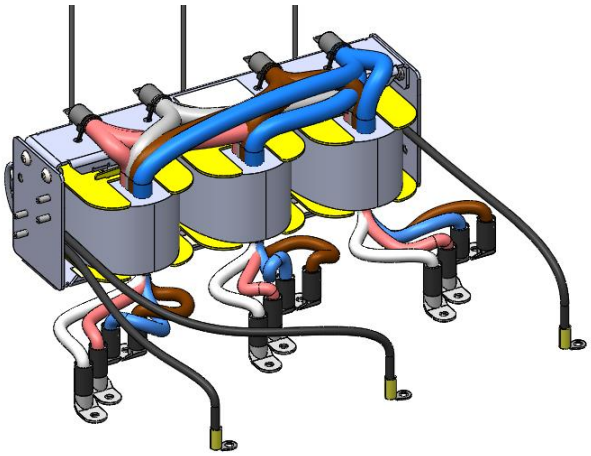

Figure 1. General view

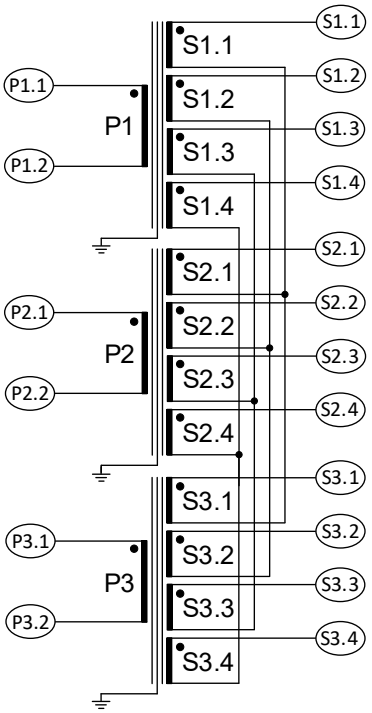

Figure 2. Electrical circuit

Parameter description	Parameter	Comment
Circuits	Circuit terminals are shown in **Błąd! Nie można odnaleźć źródła odwołania.**	
Rated supply voltage	$V_{P1.1-P1.2} = V_{P2.1-P2.2} = V_{P3.1-P3.2} = 430\ V_{RMS}$	
Rated frequency	$f_{sw} = 30$ kHz	
Rated power	S = 13.5 kVA	For single three phase transformer
Rated output current	$I_{S1.1} = I_{S1.2} = I_{S1.3} = I_{S1.4} = I_{S2.1} = I_{S2.2} = I_{S2.3} = I_{S2.4} = I_{S3.1} = I_{S3.2} = I_{S3.3} = I_{S3.4} = 110\ A_{RMS}$	
Turns ratio	P1 : S1.X = P2 : S2.X = P3 : S3.X = 35 : 1	Routine test
Primary Winding DC Resistance	$R_{DC} \leq 40.5\ m\Omega$	Routine test, given values are valid for 20°C (resistance temperature coefficient 0.00393 1/K)
Secondary Winding DC Resistance	$R_{DC} \leq 0.75\ m\Omega$	Routine test, given values are valid for 20°C (resistance temperature coefficient 0.00393 1/K)
Coupling capacitance	$C_{PRI-SEC} \leq 120$ pF	Routine test at 0.3 V, 30 kHz sine voltage, measured with all shields grounded
Dielectric strength	Between all primary and secondary windings - 3500 V_{RMS} @50 Hz	min. 1 sec. as routine test min. 60 sec. as type test
Dielectric strength	Between all primary windings and core / mounting frame - 3500 V_{RMS} @50 Hz	
Dielectric strength	Between all secondary windings and core / mounting frame - 1100 V_{RMS} @50 Hz	
Rated ambient temperature	$T_a = +40$ °C	
Insulation class	B (130°C)	System should provide power derating to prevent exceeding 110 °C on windings surface

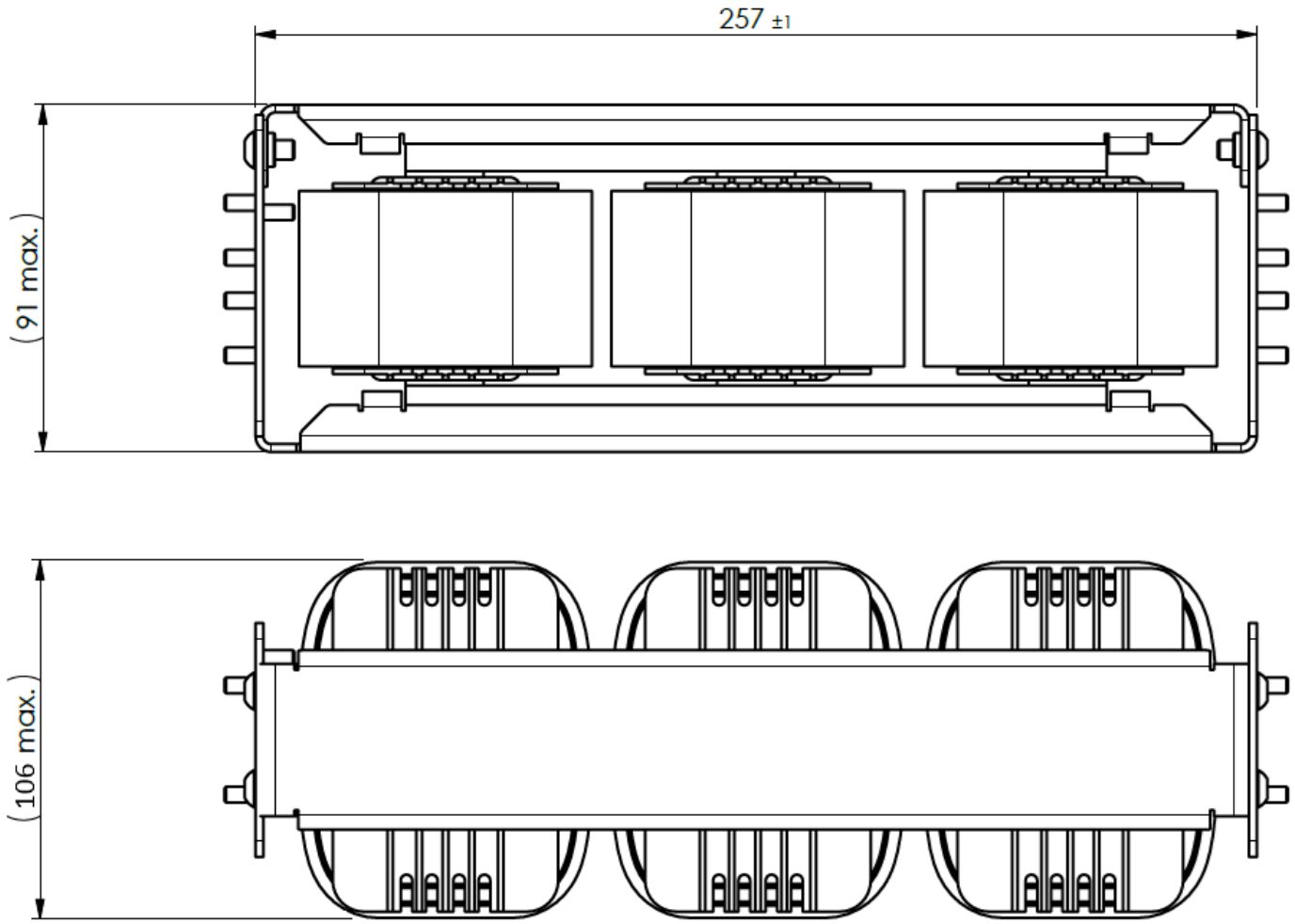

Figure 3. Transformer dimensions in mm