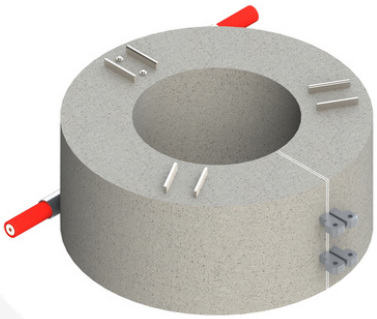
# MagPower-3H™ Transformer

**A Groundbreaking Medium Frequency Transformer for Solid-State Transformers**



Single-phase

## Introduction

The MagPower-3H™ (High Power, High Voltage, High Frequency) is an innovative medium frequency transformer specifically engineered for solid-state transformers. It offers exceptional performance, competitive pricing, reliability, and safety, making it the ideal choice for data centers and renewable energy applications. This technology is developed in partnership with the global leaders in the cement and concrete spaces.

## Core Advantages

### Patented Technology

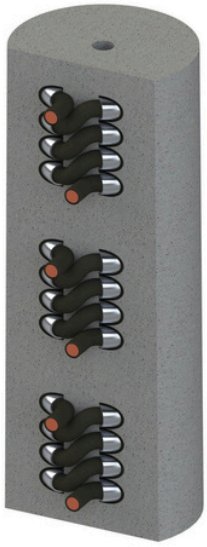
Combines patented magnetizable concrete with proprietary insulation and winding technologies.

### High Performance

Low losses at high frequencies yield high efficiencies for demanding AC & DC grid applications.

### Safe & Eco-Friendly

Forced air-cooled, Oil-free design with no fire risk. Magnetic aggregates obtained from recycling for cost efficiency.



Three-phase

## Overview

**Shape:** Ring embedded coil

**Core Material:** Magnetizable concrete MC60®

**Winding Material:**

- Primary: high voltage cable
- Secondary: aluminum cavity

**Phases:** 1-phase/3-phase

**Manufacturing:** Scalable production at pre-casting plants

## Specifications

**Rated Power:** 200 kVA - 5 MVA

**Primary Voltage:** Up to 36 kV

**Secondary Voltage:** Up to 1.5 kV

**Frequency:** 20 - 100 kHz

**Current:** Up to 300 A

**Turns Ratio:** 1:1 to 4:1

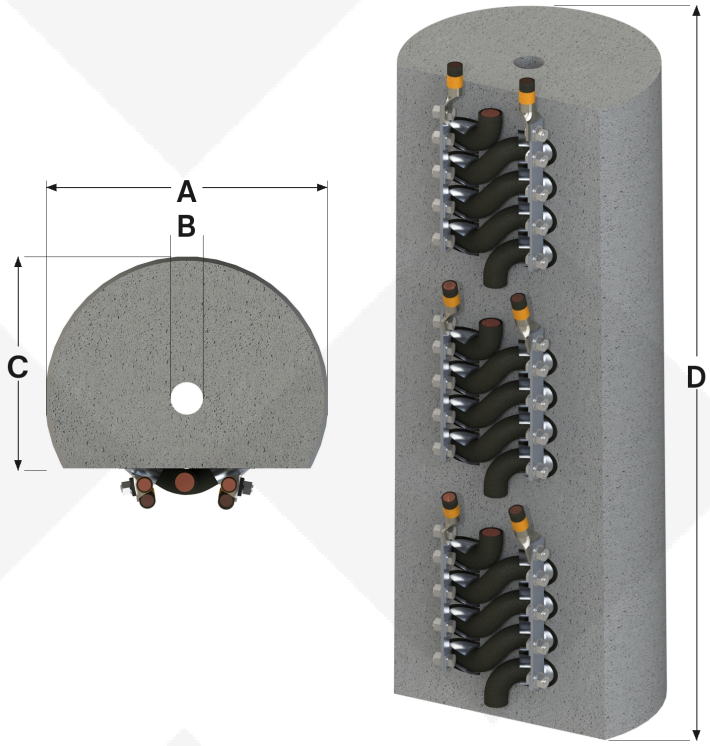
**Efficiency:** > 99%

**Power Density:** > 16 MW/m$^3$

# Example MagPole 300 kVA (100 kVA/phase)

Part number: 3H-0.3M-14-100-4N-3P

| | | | | |
|---|---|---|---|---|
| **Max. Power Rating:** | 300 kVA | **Dimensions:** | **A:** | 17 ± 0.5 cm |
| **Max. Primary Voltage:** | 14 kV | | **B:** | 2 ± 0.5 cm |
| **Operating Frequency:** | 25 - 50 kHz | | **C:** | 13 ± 0.5 cm |
| **Turns Ratio:** | 4:1 | | **D:** | 44 ± 0.5 cm |
| **Phases:** | 3-Phase | **Weight:** | | 31.5 ± 1 kg |
| **Primary Inductance:** | 30 µH ± 5% | | | |
| **Midband Efficiency:** | 99.5% | | | |
| **BIL (1.2/50 µs):** | 200 kV | | | |
| **PD (inception & extinction voltages > 14 kV):** | < 10 pC | | | |

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