

Synchronous reluctance motors (SynRMs) are gaining in popularity in industrial drives due to their permanent magnet-free, competitive performance, and robust features. This paper studies the power losses in a 90-kW converter-fed SynRM drive by a calorimetric method in comparison of the traditional input-output method. After the converter and the motor were measured simultaneously in separate chambers, the converter was installed inside the large-size chamber next to the motor and the total drive system losses were obtained using one chamber. The uncertainty of both measurement methods is analyzed and discussed.