Energy efficient standard drives

Challenge

Bühler delivers a broad spectrum of machines to practically all market areas around the world. Most of the machines require electrical drive power, i.e. motors and related electrical components.

The focus is on energy efficiency for standard motors with more than 2000 operating hours per year.

We are looking for cost optimized solutions from power line to motor shaft which are appropriate for various levels of target markets.

This innovation topic covers a very broad range. No supplier is expected to cover all requirements.

The best chances to succeed are for suppliers who can cover at least an interesting subset, e.g.:
- High efficiency induction motors for fixed speed applications with a good worldwide support
- Various cost optimized drive solutions for emerging market areas
- Broad spectrum of IE4 drives for worldwide use

Requirements

- Standard motor frame sizes according to IEC and/or NEMA
- Low voltage drives, 3-phase, 50/60 Hz, 2/4/6-poles, continuous operation (S1), standard torque
- Broad supply and service infrastructure from supplier (large region or worldwide)
- Typical power ranges
  - 0.5 … 5 kW for gear motors and auxiliary drives
  - 5 … 200 kW typically for main drives
- Flexibility between cost and efficiency levels according to the target markets
  - IE2 efficiency as a minimum level for markets with focus on initial costs
  - IE3 efficiency as the preferred level with a balance between initial costs and operating costs
  - IE4 efficiency for top products and energy sensitive markets with focus on TCO
- Generally high requirements on robustness, low requirements on dynamical properties
- Fixed speed applications with focus on induction motors to run direct-on-line
- Variable speed applications with open motor technology (IM, PMM, SynRM) including drives