

Gdańsk 27/03/2015

Appendix 1

to the letter of inquiry No. ZO/2015/02

Inverter should meet the following requirements:

- Mains 3x400 V, 50/60 Hz
- Power approx. 150 kW
- Bidirectional power flow for regenerative braking
- Two modes of operation:
 - Maintaining a set point torque value (positive when driving and negative when braking)
 - Maintaining a set point rotational speed value
- Possibility to connect an external torque sensor (using analog 0-10V input) to keep the torque accuracy of 0.1% in static and dynamic conditions
- Speed range +/- 8000 RPM (maximum output frequency approx. 350 Hz)
- Speed accuracy +/- 1 RPM
- Possibility of setting the torque set point in the range of +/-100 % of the nominal value
- Torque accuracy 0.1% of the nominal value (with constant calibration by an external torque sensor)
- Integrated PID controller for torque control (set point from an analog input)
- Integrated PID controller for speed control (set point from an analog input)
- Hot start
- Preferred interface: CANopen
- The communication interface should allow:
 - reading current values of both the estimated rotational speed and torque at least every 2 ms,
 - measuring the speed and torque from the external sensors at least every 2 ms.
- The communication interface should allow setting the desired modes of operation, speed and torque every 5 ms,
- Air cooling,
- Elimination (avoidance) of resonance frequency bands,
- Embedded EMC/RFI filters are required.