EMBB specification

Architecture:
• Data acquisition unit with the real time controller

Inputs:
• Three voltage inputs for stator voltage measurement (0-500 V)
• Three current inputs for stator currents measurement (1A/5A)
• One voltage input for excitation current measurement (0-10 V)
• One voltage input for speed measurement (0-10 V)
• Two RTD (pt100) or thermocouple inputs
• Two vibration inputs (IPE)

Digital/relay outputs:
• Number of outputs: 2 to 8
• Continuous current: 6 A
• Maximum switching power: 1500 VA
• Maximum switching voltage: 250 VAC/DC
• Maximum switching frequency: 0.1 Hz
• Rated isolation voltage: 300 V overload (category III) by EN 50178
• Surge withstand: 4 kV (1,25/50 µs), by IEC 5017

Communication:
• Ethernet 10/100

Power supply:
• DC: 80 V to 370 V
• AC: 85 to 264 V, frequency 47 to 63 Hz
• Maximum allowed power supply interruption: 100 ms for 230 VAC/ 20 ms for 115 VAC
• Test voltage: 3 kV (2 kV against ground)

Temperature range:
• Operational temperature range: -20°C to +70°C (storage temperature: -40° to +85°C)

Dimensions:
• Cabinet IP 54 (IP 66 on request) – typical dimensions WHD: 400x400x200

Data visualization:
• Web browser for local and remote access

Data logging:
• Database for long-term data, alarm and events archival

Standards compliance:
• EMC immunity/emission: EN 61326-1 (IEC 61326-1:2005), EN 61000-3-2+A1+A2
  (IEC 61000-3-2+A1+A2), EN 61000-3-3 (IEC 61000-3-3), EN 61000-4-10+A1
  (IEC 61000-4-10+A1), EN 61000-4-12 (IEC 61000-4-12), EN 61000-4-18+A1
  (IEC 61000-4-18+A1)
• Vibration/shock resistance (EN 60068-2-6/EN 60068-2-27/29)
EMBB ELECTRICAL MACHINE BLACK BOX

The EMBB system records all harmful working conditions that are not allowed or represent a potential danger to the machine’s lifetime. By equipping the synchronous and asynchronous machines with EMBB system owners and users get an additional insight into the harmful working conditions during machine operation. EMBB allows a better asset management, and a reliable monitoring of the machine, especially during the warranty period.

EMBB Features
- Detects and records harmful working conditions
- Reveals failures caused by harmful machine use
- Reduces the potential damage costs
- Modular and upgradeable on-line system for new, as well as for existing, machines
- Long term data storage
- Local and remote system access
- Enables a better asset management
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