DATASHEET
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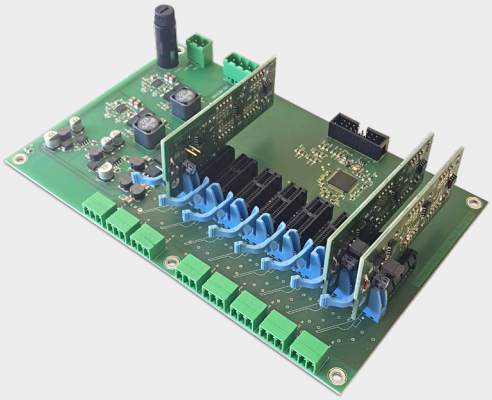
Machine data-acquisition unit mmBox Mk.2



Mezzanine board for 24-bit synchronous high-speed data acquisition with three inserted filterboards.

Prozessor board (top view) and rear-mounted are WLAN and LTE module.

- **Applications: condition monitoring, predictive maintenance, any sensor data collection**
- **Electrical motors/generators, pumps, ventilators, gearboxes, engines, factories / plants etc.**
- **Ideally suited for permanent add-on / retrofit installation on critical or high-valued machines**

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Mechmine
predictive maintenance

Features

Unit contains a processor board and a mezzanine board for data acquisition
Processor board supply voltage: 7 – 27 V, min. 2 A
CPU: NXP MCIMX6Q5EYM10Ax, 4-core, 1 GHz, 1 GB DDR3, 4 GB eMMC, ARM TrustZone
Memory extension through micro SD-card or SATA II SSD, e.g. for database hosting
MCU Atmel AT91SAM3X8E for real-time processing or data-acquisition, accessed via USB
1 × RJ45 connector for Ethernet 10/100/1000 MBit/s
3 × USB: 1 × USB OTG, 2 × Type A connector (max. 2 A)
1 x serial USB console
PCB integrated (ambient) temperature sensor, CPU temperature sensor
12 × low-speed 16-bit channels, selectable: pt100, ±12 V
2 × high-resolution tacho-signal ports (e.g. for RPM impulse sensors)
RTC with 3 V cell battery 2032
Watchdog
1 Monostable relay EC2-5NU, GPIO controlled
1 Bistable relay EC2-5SNU, GPIO controlled
1 × SIM card slot
1 × mPCIE slot for WIFI / BLE / GPS / nRF52 / LTE module, e.g UBlox MPCI-L2 (USB host interface only)
1 × mPCIE slot for WIFI / BLE / GPS / nRF52 / LTE module (UBlox MPCI-L2) (USB host interface only)
40-pin header with SPI, I2C, GPIO, UART, PWM (not 100 % Raspberry-Pi compatible)
Connectors: 12 × 2-pol (Würth 691322110002), 1 × 2-pol (Molex 0395321002)
OS: Linux Debian 8 (encrypted userland space available upon request)
PCB pin compatible and upgrade ready for iMX8 processor module

Mezzanine board:
– Supply voltage: 24 V
– 8 × 24-bit synchronous channels with 52.5 ksps or 105 ksps
– 16 synchronous channels through serialization of two boards
– Filtercards
  – Input signal: IEPE (typ. 3.5 mA), ±2.5 V or ±5 V
  – Other input signals upon request, e.g. 4-20mA, 0-10mA
  – Analogue anti-aliasing filter bandwidth: 2.5 / 5 / 10 / 25 / 50 kHz (solder jumpers)
– Local onboard power supply: 1 × 5V 2.5A and 1 × 9V 2.5A
– Connectors: 8 × 3-pol (Felec 07-350.103), 1 × 4-pol (07-200.306), 1 × 2-pol (07-200.300)

Dimensions and connections

- Case: Schneider Electric: IP66, Size: L = 300 mm, W = 200 mm, H = 120 mm
- Weight: typ. 4.1 kg
- 16 channel version uses 80 mm height extension frame: H = 120 mm + 80 mm
- Connectors
  - 1 × RJ45 for cabled installation or USB
  - 4, 8 or 16 cable glands
  - 2 × SMA connectors for LTE Antennae (Antennas not included)

Compliance

- IEC 61326 (electrical equipment for measurement, control and laboratory use)
- 2011/65/EU, 2015/863 (ROHS), 2012/19/EU (WEEE)
- EN 55022 (emission)
- EN 61000-4-2 (ESD)
- EN61000-4-3 (immunity)
- EN 61000-4-4 (burst)
- EN61000-4-5 (surge)
- EN61000-4-6 (immunity)