

espressoDAQ

DQ401 DC module

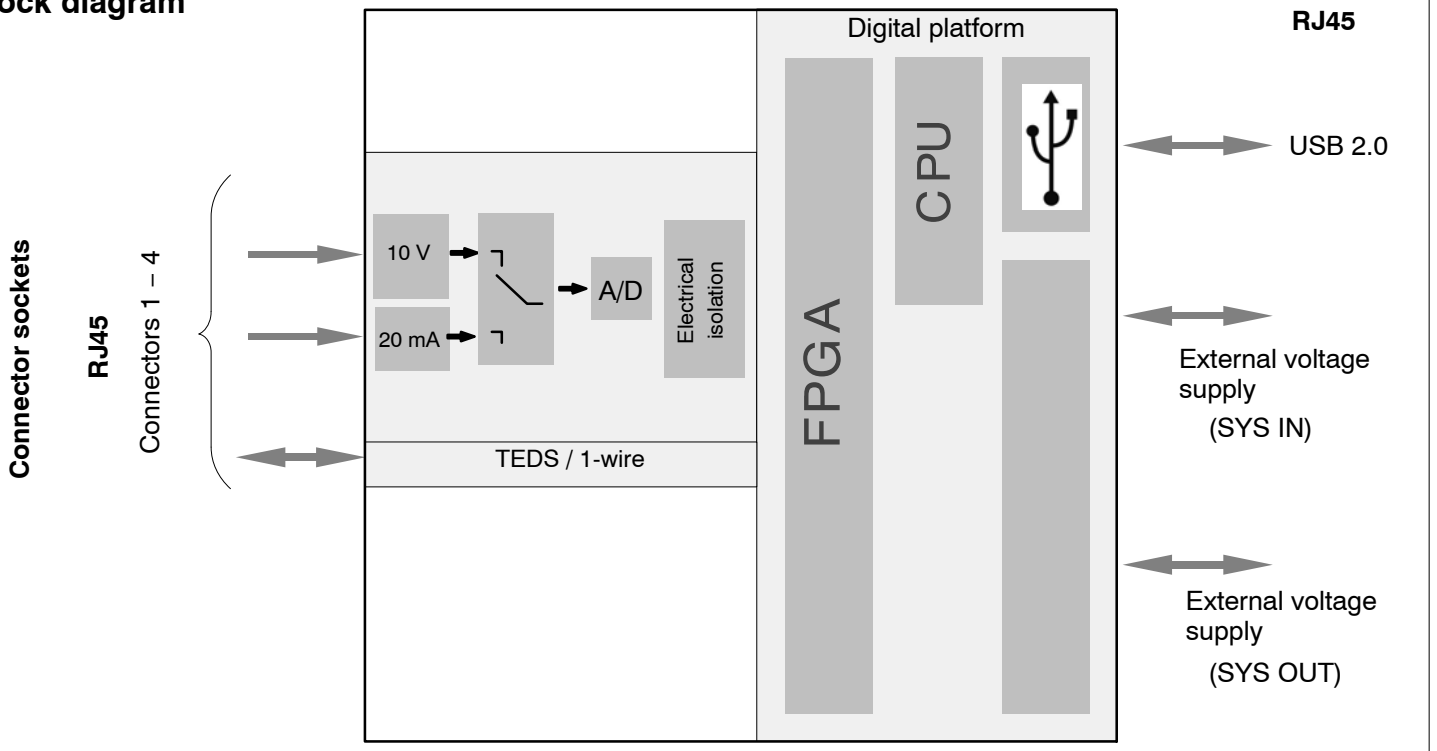
Dynamic current/voltage amplifier



Special features

- 4 individually configurable inputs
- Data rate up to 40,000 measured values/s
- 24-bit A/D converter per channel for synchronous measurements
- Active low-pass filter
- DC supply voltage; 1 device via USB (5 V), otherwise 6 ... 28 V
- TEDS capability
- Compact design

Block diagram



Specifications

| DC module | | |
|---|--------------------------------------|---|
| Type | | DQ401 |
| Inputs | | 4, electrically isolated from each other and from the supply |
| Transducer technologies per connector | | Voltage, current |
| A/D conversion per channel | | 24-bit delta-sigma converter |
| Data rate | S/s | 1 ... 40 000, adjustable individually per channel |
| Bandwidth | kHz | 8.0 |
| Active filter (can be disabled) | Hz | Bessel: 0.1 ... 8000; 20 Steps Buttlerworth: 0.1 ... 8000; 20 Steps |
| Transducer identification (TEDS, IEEE1451.4) maximum TEDS module distance | m | < 30 |
| Transducer connection | | RJ45 |
| Supply voltage range (DC) Supply via USB Supply via SYS-IN | V V | 5 6 – 28, nominal (rated) voltage 24 V |
| Power consumption | W | < 2.7 |
| USB (data link, optional voltage supply) Data rate to PC (single module) Plug connection Max. cable length to module | S/s - m | Version 2.0 High Speed 320.000 8P8C plug (RJ45) 2 |
| Nominal (rated) temperature range Supply via USB Supply via SYS-IN | °C °C | -10 to + 55 -10 to + 60 |
| Storage temperature range | °C | -40 to + 80 |
| Relative humidity | % | 10 ... 90 (non-condensing) |
| Protection class (height up to 2000 m, degree of pollution 2) | | III |
| Degree of protection | | IP20 per EN60529 |
| Mechanical tests Vibration (tested to EN60068-2-6) Impact (tested to EN60068-2-27) | | 50 m/s ² , 5-65 Hz, 30 cycles 350 m/s ² , 11 ms, half-cosine, 3 shocks in each direction |
| EMC requirements | | to EN61326-1 |
| Dimensions, horizontal (H x W x D) | mm | 24 x 71 x 116 |
| Weight, approx. | g | 170 |
| Voltage 10 V (DC) | | |
| Accuracy class | | 0.08 |
| Transducers that can be connected | | Voltage sensor ± 10 V |
| Permissible cable length between DQ401 and transducer | m | < 30 |
| Measuring range | V | ± 10 |
| Measurement frequency range (-3 dB) | Hz | 0 ... 8000 |
| Internal resistance of voltage source | kΩ | < 10 |
| Input impedance | MΩ | > 50 |
| Noise at 25°C (peak-to-peak) 10 Hz 8 kHz | μV _{SS} μV _{SS} | 200 2000 |
| Non-linearity | % | < 0.02 of full scale value |
| Common-mode rejection for DC common mode for 50 Hz common mode, typically | dB dB | > 110 > 85 |
| Common-mode voltage, max. (to housing and supply ground) | V | ± 60 |

Specifications (continued)

| | | |
|---|------------------|---|
| Zero drift | %/10K | 0.01 |
| Full-scale drift | %/10K | 0.01 |
| Current (DC) 20 mA | | |
| Accuracy class | | 0.08 |
| Transducers that can be connected | | Transducers with 4 ... 20 mA current output |
| Permissible cable length between DQ401 and transducer | m | < 30 |
| Measuring range | mA | ± 25 4 ... 20 mA |
| Measurement frequency range (-3 dB) | Hz | 0 ... 8000 |
| Measuring resistance value | Ω | typically 7.5 |
| Noise at 25°C (peak-to-peak) | | |
| 10 Hz | μV _{SS} | 0.5 |
| 8 kHz | μV _{SS} | 4 |
| Non-linearity | % | < 0.02 of full scale value |
| Common-mode rejection | | |
| for DC common mode | dB | > 100 |
| for 50 Hz common mode, typically | dB | > 85 |
| Common-mode voltage, max. (to housing and supply ground) | V | ± 60 |
| Zero drift | %/10K | 0.01 |
| Full-scale drift | %/10K | 0.01 |

Scope of supply:

| | |
|---------------------------------------|------------|
| | Order no. |
| 1 USB to RJ45 adapter cable, 2 m long | 1-KAB286-2 |
| Operating manual | |

Accessories, to be ordered separately:

| | |
|--|---|
| | Order no. |
| Active USB hub, 4-port, MOXA, including standard USB cable | 1-USBHUB-4A |
| 1 USB to RJ45 adapter cable, 2 m long | 1-KAB286-2 |
| RJ45 plug for mounting without tool | 1-RJ45-EMV |
| 1 TEDS module (1-wire) | 1-TEDS-BOARD |
| HBM TEDS dongle for writing and reading of TEDS | 1-TEDS-Dongle |
| Temperature sensor (1-wire) with free ends, 1 sensor per channel | available at www.wiregate.de |
| RJ45-to-D-Sub-HD15 adapter cable | 1-KAB417 |
| RJ45 supply cable, open strands | 1-KAB285-3 |

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