Data Sheet

espressoDAQ

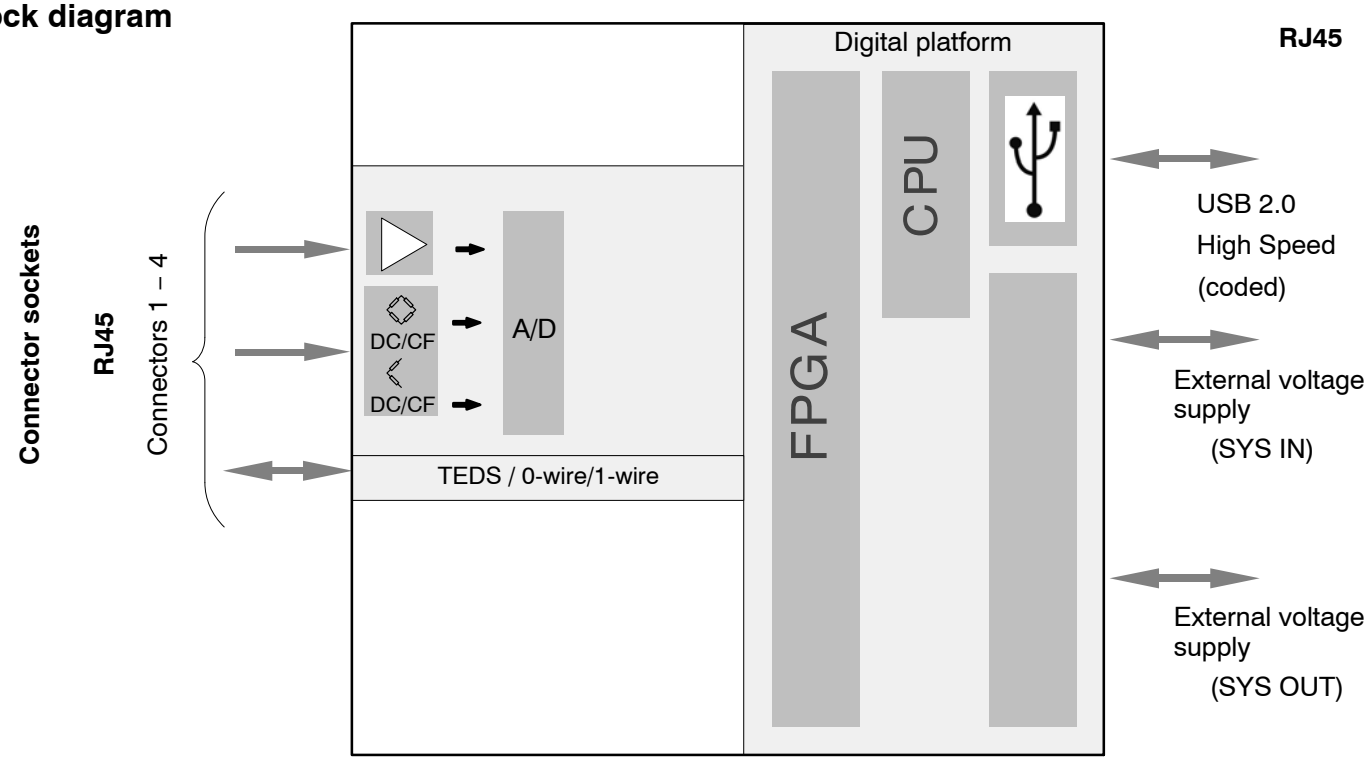
DQ430 strain gage bridge module

Dynamic strain gage amplifier

Special features

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

Block diagram



Specifications

SG module		
Type		**DQ430**
Accuracy class		0.08
Inputs		4
Transducer technologies per connector		SG fullbridge in six wire circuit and SG halfbridge in five wire circuit
A/D conversion per channel		24-bit delta-sigma converter
Data rate	S/s	1 – 40 000, adjustable individually per channel
Bandwidth at DC excitation	Hz	8000
Active filter (can be disabled)	Hz	Bessel: 0.1 ... 8000; 20 Steps Butterworth: 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	< 2.5
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 + 50 –10 to + 55
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
Strain gage full bridge and half bridge, 4 mV/V square-wave CF with 1 V and 2.5 V excitation		
Carrier frequency (square wave),alternatively	Hz	2000 ±0.5 or 500 ±0.5
Bridge excitation voltage	V	1; 2.5 (±5 %)
Transducers that can be connected		SG full and half bridges
Permissible cable length between DQ430 and transducer	m	< 30
Measuring range at 2.5 V excitation at 1.0 V excitation	 mV/V mV/V	 ±4 ±10
Measurement frequency range (–3 dB) cf 2000 Hz cf 500 Hz	 Hz Hz	 400 100
Transducer impedance at 2.5 V excitation at 1.0 V excitation	 Ω Ω	 200 ... 5000 150 ... 5000
Noise at 25°C (peak-to-peak) 0.1 Hz 1 Hz 10 Hz 100 Hz	 µV/V µV/V µV/V µV/V	 0.1 0.2 0.6 2.2

Specifications (continued)

Zero drift (full bridge with 2.5 V excitation)	%/10K	< 0.03 of full scale value
Full scale drift (2.5 V excitation)	%/10K	< 0.05 of measured value
Strain gage full bridge and half bridge, 4 mV/V DC with 1V and 2.5 V excitation		
Accuracy class		0.08
Bridge excitation voltage	V	1; 2.5 (±5 %)
Transducers that can be connected		SG full and half bridges
Permissible cable length between DQ430 and transducer	m	30
Measuring range at 2.5 V excitation at 1.0 V excitation	 mV/V mV/V	 ±4 ±10
Measurement frequency range (–3 dB)	Hz	8000
Transducer impedance at 2.5 V excitation at 1.0 V excitation	 Ω Ω	 200 ... 500[1)] 150 ... 500
Noise at 25°C (peak-to-peak) 0.1 Hz 1 Hz 10 Hz 100 Hz 1000 Hz 8000 Hz	 µV/V µV/V µV/V µV/V µV/V	 2 3 5 6 7 15
Zero drift (full bridge with 2.5 V excitation)	%/10K	< 0.03 of full scale value
Full scale drift (2.5 V excitation)	%/10K	< 0.05 of measured value

1) Up to 5000 ohm, with 350 ppm/100ohm typical zero offset

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 toole	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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