Data Sheet

espressoDAQ

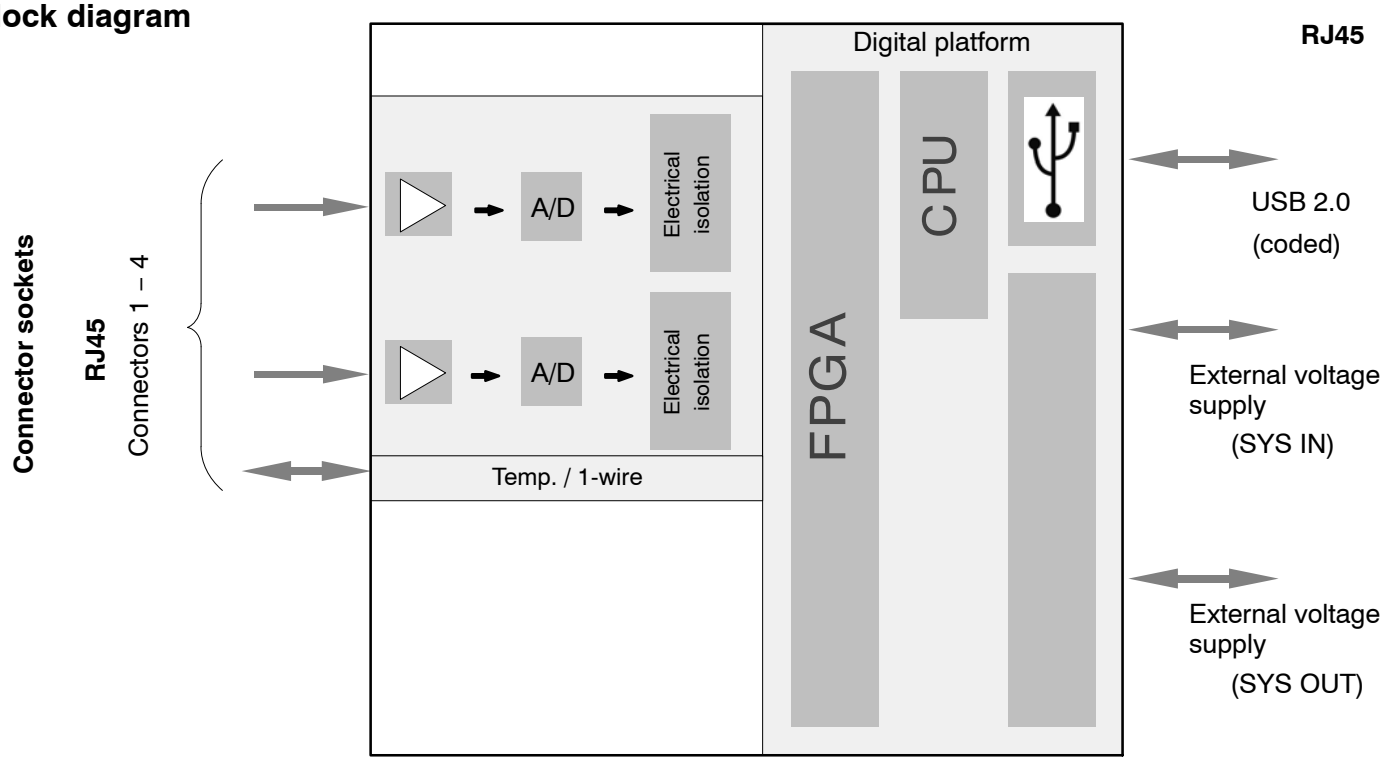
DQ809 thermo module

Thermocouple amplifier

Special features

- **8 individually configurable inputs**
- **Thermocouples, all common types**
- **Data rate up to 2000 measured values/s**
- **24-bit A/D converter per channel for synchronous, parallel measurements**
- **Active low-pass filter**
- **DC supply voltage; 1 device via USB (5 V), otherwise 6 ... 28 V**
- **Compact design**

Block diagram



Specifications

Thermo module		
Type		**DQ809**
Accuracy class		0.08
Inputs		8, electrically isolated from each other and from the supply
Transducer technologies per connector		Thermocouples with – cold junction in the thermo adapter (1–KAB419), – temperature sensor (www.wiregate.de) – voltage source
Mesuring range	mV	± 100 mV
A/D conversion per channel		24-bit delta-sigma converter
Data rate	S/s	0.1 – 2000, individually adjustable per channel
Bandwidth	Hz	200
Active filter (can be disabled)	Hz	Bessel: 0.1 ... 200; 14 Steps Butterworth: 0.1 ... 200; 14 Steps
Transducer connection via thermo adapter via RJ45		 MINI THERMO socket Max. cable length < 30 m
Transducer connection via temperature adapter		Mini thermosocket RJ45
Supply voltage range (DC) Supply via USB Supply via SYS–IN	 V V	 5 6 ... 24, nominal (rated) voltage 24 V
Power consumption	W	< 2.5
USB (data link, optional voltage supply) Data rate to PC 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	°C	–10 to + 45
Storage temperature range	°C	–40 to + 80
Temperature drift	ppm/ 10K	100
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/s², 5–65 Hz, 30 cycles 350 m/s², 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
Thermocouples with thermo adapter (1–KAB419)		
Thermocouple types		J, K, T, S, E, B, N, R, C
Linearization range J K T S E B N R C	 °C °C °C °C °C °C °C °C °C	 –210 ... +1200 –270 ... +1372 –270 ... +431 –50 ... +1768 –270 ... +1000 0 ... +1840 –270 ... +1300 –50 ... +1768 0 ... + 2371
Cold junction Temperature range Accuracy	 °C °C	 –10 ... +60 ± 0,5

Technical data (continued)

Noise > 0 °C ; for Type B : > 400 °C		
with filter 1 Hz, Bessel		
Type J, K, T, E, N	K	< 0.15
Type C, R, S	K	< 0.3
Type B	K	< 04
with filter 10 Hz, Bessel		
Type J, K, T, E, N	K	< 0.6
Type C, R, S	K	< 1.2
Type B	K	< 1.5
with filter 100 Hz, Bessel		
Type J, K, T, N	K	< 1.5
Type C, R, S	K	< 5.5
Type B	K	< 7
Linearity error		
Type J, K, T, E, N at T> −200°C	K	< 0.08
Type R, S at T> 0°C	K	< 0.09
Type B at T> +200°C	K	< 0.3
Type C at T> 0°C	K	< 0.3

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
4 RJ445−to−2 MINI THERMO thermo adapter, for connecting 2 thermocouples incl. cold junction	1−KAB419
1 USB to RJ45 adapter cable, 2 m long	1−KAB286−2
RJ45 plug for mounting without tools	1−RJ45−EMV
1 TEDS module (1-wire)	1−TEDS−BOARD
HBM TEDS dongle for writing and reading of TEDS	1−TEDS−Dongle
RJ445−to−2 MINI THERMO thermo adapter, for connecting 2 thermocouples incl. cold junction	1−KAB419
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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