

Electrical Data

Range	Resolution	Tolerance from Measured or Set Value
Voltage source		
-10.000 to +75.000 mV (max 3.5 mA)	0.001 mV	± 0.02 % ± 10 µV*
0.000 to 20.000 V DC	0.001 V	± 0.015 % ± 2 digits
Voltage measurement		
-10.000 to +75.000 mV not isolated	0.001 mV	± 0.02 % ± 10 µV*
-0.100 to +20.000 V DC isolated	0.001 V	± 0.015 % ± 2 digits
-0.100 to +30.000 V DC	0.001 V	± 0.015 % ± 2 digits
Current source		
0.000 to 24.000 mA / 1 kΩ to 20 mA	0.001 mA	± 0.015 % ± 2 digits
Current measurement (isolated/not isolated)		
-0.100 ... 24.000 mA	0.001 mA	± 0.015 % ± 2 digits
Resistance simulation (work with all pulsed instrumentation transmitter ≥ 5 ms)		
5.0 to 400 Ω/lmeas 0.1 -0.5 mA	0.1 Ω	± 0.015 % ± 0.1 Ω
5.0 to 400 Ω/lmeas 0.5 -3.0 mA	0.1 Ω	± 0.015 % ± 0.03 Ω
400 to 1500 Ω/lmeas 0.05-0.8 mA	1 Ω	± 0.015 % ± 0.3 Ω
1500 to 4000 Ω/lmeas 0.05-0.4 mA	1 Ω	± 0.015 % ± 0.3 Ω
Resistance measurement		
0.00 to 400.00 Ω	0.01 Ω	± 0.015 % ± 0.03 Ω
400.1 to 4000.0 Ω	0.1 Ω	± 0.015 % ± 0.3 Ω

*Connected to thermocouple terminal

Frequency

Range	Tolerance
Frequency (Amplitude adjustable 1 ... 20 V) rectangular	
CPM source 2.0 to 600.0 CPM	± 0.05 %
Hz source 1.0 to 1000.0 Hz	± 0.05 %
kHz source 1.0 to 10.0 kHz	± 0.125 %
CPM measure 2.0 to 600.0 CPM	± 0.05 % ± 0.1 CPM
Hz measure 1.0 to 1000.0 Hz	± 0.05 % ± 0.1 Hz
kHz measure 1.00 to 10.0 kHz	± 0.05 % ± 0.01 kHz
Pulse (Amplitude adjustable 1 ... 20 V) source only	
Pulse 1 to 30.00	
2 CPM to 10.0 kHz	

Thermocouples models

Thermocouples	Range	Tolerance
Measure /Source		
J EN 60584-1/ITS90	-200.0 to 0.0 °C	0.4 °C
	0.0 to 800.0 °C	0.2 °C
	800.1 to 1200.0 °C	0.3 °C
K EN 60584-1/ITS90	-200.0 to 0.0 °C	0.6 °C
	0.0 to 1000.0 °C	0.3 °C
	1000.1 to 1372.0 °C	0.5 °C
T EN 60584-1/ITS90	-200.0 to 0.0 °C	0.6 °C
	0.0 to 400.0 °C	0.2 °C
E EN 60584-1/ITS90	-200.0 to -100.0 °C	0.2 °C
	-100.0 to 950.0 °C	0.2 °C
R EN 60584-1/ITS90	0 to 1750 °C	1.2 °C
S EN 60584-1/ITS90	0 to 1750 °C	1.2 °C
B EN 60584-1/ITS90	600 to 800 °C	1.2 °C
	801 to 1000 °C	1.3 °C
	1001 to 1820 °C	1.5 °C
C Hoskins E 988	0.0 to 1000.0 °C	0.6 °C
	1000.1 to 2316.0 °C	2.3 °C
XK GOST	-200.0 to 800.0 °C	0.2 °C
BP NIST	0.0 to 2500.0 °C	0.9 °C
L DIN 43710/IPTS68	-200.0 to 0.0 °C	0.25 °C
	0.0 to 900.0 °C	0.2 °C
U DIN 43710/IPTS68	-200.0 to 0.0 °C	0.5 °C
	0.0 to 400.0 °C	0.25 °C
N EN 60584-1/ITS90	-200.0 to 0.0 °C	0.8 °C
	0.0 to 1300.0 °C	0.4 °C

All tolerances are quoted without error at the reference junction.
The reference junction error outside 23 °C ± 5 °C is 0.05 °C / °C.
Additional reference junction error 0.2 °C.

Temperature measurement / temperature simulation RTD

Designation	Range	Tolerance from Measured of Set Value
Measure Source		
Ni120 (672) Minco	- 80.0 to 260.0 °C	± 0.08 °C ± 0.06 °C
Ni100 (618) DIN 43760/IPTS68	- 60.0 to 250.0 °C	± 0.08 °C ± 0.15 °C
CU10 (427)	- 100.0 to 260.0 °C	± 0.82 °C ± 0.82 °C
CU50 GOST	- 180.0 to 200.0 °C	± 0.18 °C ± 0.2 °C
CU100 GOST	- 180.0 to 200.0 °C	± 0.11 °C ± 0.13 °C
YSI400	15.0 to 50.0 °C	± 0.02 °C ± 0.05 °C
Pt 100 (385) DIN EN 60751:1996	- 200.0 to 200.0 °C	± 0.13 °C -
	200.0 to 800.0 °C	± 0.23 °C -
	- 200.0 to 400.0 °C	- ± 0.2 °C
	400.0 to 800.0 °C	- ± 0.29 °C
Pt 200 (385) DIN EN 60751:1996	- 200.0 to 100.0 °C	- ± 0.45 °C
	100.0 to 300.0 °C	- ± 0.52 °C
	300.0 to 630.0 °C	- ± 0.66 °C
	- 200.0 to 630.0 °C	± 0.61 °C -
Pt 500 (385) DIN EN 60751:1996	- 200.0 to 100.0 °C	- ± 0.21 °C
	100.0 to 300.0 °C	- ± 0.26 °C
	300.0 to 630.0 °C	- ± 0.34 °C
	- 200.0 to 630.0 °C	± 0.31 °C -
Pt 1000 (385) DIN EN 60751:1996	- 200.0 to 100.0 °C	- ± 0.14 °C
	100.0 to 300.0 °C	- ± 0.18 °C
	300.0 to 630.0 °C	- ± 0.25 °C
	- 200.0 to 630.0 °C	± 0.21 °C -
Pt 10-385	- 200.0 to 100.0 °C	- ± 0.84 °C
	100.0 to 300.0 °C	- ± 0.95 °C
	300.0 to 630.0 °C	- ± 1.09 °C
	630.0 to 800.0 °C	- ± 1.2 °C
	- 200.0 to 800.0 °C	± 1.13 °C -
Pt 50-385	- 200.0 to 100.0 °C	- ± 0.25 °C
	100.0 to 300.0 °C	- ± 0.26 °C
	300.0 to 630.0 °C	- ± 0.34 °C
	630.0 to 800.0 °C	- ± 0.4 °C
	- 200.0 to 800.0 °C	± 0.33 °C -
Pt 100(3926) + Pt 100 (3916)	- 200.0 to 100.0 °C	- ± 0.13 °C
	100.0 to 300.0 °C	- ± 0.17 °C
	300.0 to 630.0 °C	- ± 0.25 °C
	- 200.0 to 200.0 °C	± 1.13 °C -
	200.0 to 630.0 °C	± 0.2 °C -

RTD: works with all pulsed instrumentation transducers up to ≥ 5 ms.

The measuring precision is based on the use of 4 wire technology. If 3 wire technology is used, ± 0.05 Ω must be added.

All values are applicable at 23 °C ± 5 °C. Outside this temperature range, the measurement is accurate to ± 50 ppm/K.

Operating temperature range: -10 °C to 50 °C

Storage temperature: -20 °C to 70 °C

Auxiliary supply:
a) Ni-MH accu built-in battery, operating time > 16 h (10 mA into 1 kΩ)
b) 230 VAC mains adapter, mains-buffered operation is possible

Interface: USB version 1.1

Housing: Aluminium console with plastic side pieces

Dimensions: (W x H x D): 160 x 85 x 175 mm

Weight: approx. 1 kg

Protection class IP 50

Protection category III

Order Code

Order Code Device

Universal calibrator DIGISTANT® model 4423 including mains adapter, test certificate with proof of traceability, USB cable and one pair of measuring cables, model 4490 **Model 4423**

DIGICAL PC software for DIGISTANT® model 4423 **Model 4423-P001**

Temperature accessories

Measuring cable for resistance and Pt 100 measurements length 1 m, with banana plugs (4 wire measurement), LEMO connector (6 pin, 1B) **Model 4499**

One pair of measuring cables, length 1 m, with two banana plugs, two probes and two test clamps (included in delivery) **Model 4490**

Connector for Pt 100 input **Model 4291-0**

Miniature connector model K **Model 4415-Z003**

Pt 100 measuring sensor **Model 42510**

Connecting line for laboratory sensor model 42510, length 2 m **Model 4281-0**

Measurement cable for mV simulation/measure **Model 99108-415A-0030015**

Pressure accessories

Interface adapter **Model 7130**

Pneumatic manual pump -850 mbar ... 7 bar **Models 7106-V0007**

Pressure manual pump -960 mbar ... 34 bar **Models 7106-V0034**

Hydraulic manual pump 0 bar ... 690 bar **Models 7106-V0690**

Adapter kit
2 x 1/4" NPT female, 2 x 1/8" NPT male,
2 x 1/8" tube connector, T fitting 1/8"
NPT female, T fitting 1/8 tube connector **Models 7132-Z002**

Pressure modules

Range	Accuracy	Overload	Model
Against atmospheric pressure			
0 to 20 mbar	± 0.1 %	400 %	7132-4020
0 to 67 mbar	± 0.05 %	400 %	7132-4067
0 to 350 mbar	± 0.025 %	400 %	7132-4350
0 to 500 mbar	± 0.035 %	300 %	7132-4500
0 to 700 mbar	± 0.025 %	300 %	7132-4700
0 to 1 bar	± 0.025 %	300 %	7132-5001
0 to 2 bar	± 0.025 %	300 %	7132-5002
0 to 3.5 bar	± 0.03 %	300 %	7132-50035
0 to 7 bar	± 0.025 %	300 %	7132-5007
0 to 10 bar	± 0.035 %	200 %	7132-5010
0 to 20 bar	± 0.025 %	200 %	7132-5020
0 to 34 bar	± 0.025 %	200 %	7132-5034
0 to 70 bar	± 0.025 %	200 %	7132-5070
0 to 100 bar	± 0.035 %	200 %	7132-5100
0 to 200 bar	± 0.05 %	200 %	7132-5200
0 to 340 bar	± 0.05 %	200 %	7132-5340
0 to 700 bar	± 0.1 %	120 %	7132-5700
Vacuum			
0 to -350 mbar	± 0.025 %	400 %	7132-4350- V001
0 to -1 bar	± 0.025 %	300 %	7132-5001- V001
Absolute			
0 to 1 bar	± 0.025 %	300 %	7132-5001- V002
0 to 2 bar	± 0.025 %	300 %	7132-5002- V002
0 to 3.5 bar	± 0.03 %	300 %	7132-50035- V002
0 to 7 bar	± 0.025 %	300 %	7132-5007- V002
0 to 20 bar	± 0.025 %	200 %	7132-5020- V002
Dual pressure / compound			
-1 to 1 bar	± 0.025 %	300 %	7132-5001- V003
-1 to 2 bar	± 0.025 %	300 %	7132-5002- V003
Difference			
0 to 350 mbar	± 0.025 %	400 %	7132-4350- V004
0 to 2 bar	± 0.025 %	300 %	7132-5002- V004
0 to 3,5 bar	± 0.03 %	300 %	7132-50035- V004

For further, comprehensive information, please see data sheet 7132 in product group 7.

Accessories for measuring force, torque, displacement

Pressure Module/Smart Sensor Interface Adapter to DIGISTANT 4423 **Model 7130**

Pressure Module/Smart Sensor Interface Adapter direct to PC via USB **Model 7131-USB**

1 Smart Sensor Interface for connecting force, displacement and torque sensors **Model 7160**

For further, comprehensive information, please see data sheet 7160 in product group 7.

Compatible sensors for force, torque and displacement can be found in the Sensors and Process Instruments catalog.

Other Accessories

Ever-ready case made of artificial leather for model 4423 with strap **Model 4493-V004**

Aluminium case for Universal Calibrator model 4423 **Model 4493-V002**

Mains adapter (included with instrument) **Model 4495-V001**

One pair of banana plugs with clamped connection **Model 4498**

USB interface cable 1.5 m ST(A) - ST(B) **Model 9900-K349**

Calibration Certificate for DIGISTANT® Model 4423

DKD (German Calibration Service) calibration or factory calibration

Standard calibration certificate with 173 DC calibration points:

- every 7 measurement points for each voltage measurement and sourcing range
- every 9 measurement points for each thermocouple measurement and sourcing range "mV"
- every 8 measurement points for each current measurement and sourcing range
- every 6 measurement points for each resistance measurement and sourcing range
- every 2 measurement points each for thermocouple models in the „measure“ and „source“ operating modes, reference junction temperature 0 °C, measurements in mV and calculated values in °C
- 56 measurement points for Pt10, Pt50, Pt100, Pt200, Pt500, Pt1000, Ni100

Model 44DKD-4423 / Model 44WKS-4423

DKD pressure calibration

DKD pressure calibration certificate for series 7132 pressure modules (complete measuring chain, against atmospheric pressure)

Model 71DKD-4423

Factory pressure calibration

For 11 points in 20 % steps across the full range of measurements for rising and falling pressure

(complete measuring chain, against atmospheric pressure)

Model 71WKS-4423

DKD force calibration

DKD force calibration for force sensors with the Smart Sensor Interface

(complete measuring chain)

Calibration according to EN ISO 376

Model 71DKD-7160

Factory force calibration

Factory force calibration for force sensors with the Smart Sensor Interface

(complete measuring chain), in 20% steps rising and falling,

1 mounting position

Model 71WKS-7160

You are also very welcome, in addition to the data sheet, to request our color brochure about DIGISTANT® model 4423 "Documented calibration - the complete range".