Delivery: ex stock | Warranty: 24 months

High-Precision Calibration Source for Voltage, Current, Thermocouples, RTDs, Frequency and Resistance

DIGISTANT® MODEL **4463** NEW

Preliminary data sheet

Includes DAkkS Deutsche Akkreditierungsstelle D-K-15141-01-00

Highlights

- DC voltage up to ±100.0000 V, ±0.002 %
- DC current up to ±50.0000 mA, ±0.005 %
- Thermocouple simulation of R, S, B, J, T, E, K, N, M, C, D, G2
- Automatic sequence function (ramp function)

Options

- RTD Simulation Pt100 ... Pt1000, Ni100 ... Ni1000
- True ohmic resistance simulation 10 Ω ... 300 kΩ
- Frequency simulation 0.01 Hz ... 15 kHz
- Frequency measurement 0.01 Hz ... 100 kHz

Applications

- Testing DC voltage and current measuring devices
- Testing thermocouple and temperature measuring instruments
- Controlling process sequences using the ramp function
- Calibration of controllers, sensors and PLC analog inputs

USB

Ethernet

Product description

This high-precision calibration source is able to measure currents up to ±50 mA, voltages ±100 V and temperature setpoint values of 12 thermocouple types, including R, S, B, J, T, E, K and N. Voltage drops across the measuring leads can be easily compensated via the sense line.

With "thermoelectric voltage simulation" you can enter °C, °F and K, the temperature scales ITS-90 or IPTS-68 and the reference junction type constant/external. Furthermore, when simulating thermocouples a calibrated external reference junction can be used, with the calibration data being taken into account in the device.

The high-resolution display and very user-friendly menu navigation system informs you quickly and in full detail about the selected function, the selected transmission value, the selected interface and the additional parameters.

The device can be operated both via the keypad and via the Ethernet and USB interface.

With the automatic sequence function (ramp function), for each measurement 32 sequences with a maximum of 100 steps can be saved and started manually or via the interface.

Technical Data

DC voltage					
Range		±300.0000 mV	±3.000000 V	±30.00000 V	±100.0000 V
Resolution		100 nV	1 µV	10 µV	100 µV
Error limit (1 year)		0.002 % +3 µV	0.002 % +20 µV	0.002 % +200 µV	0.002 % +1 mV
Maximum load		50 mA			25 mA
DC current					
Range		±25.0000 mA	50.0000 mA		
Resolution		100nA	100nA		
Error limit (1 year)		0.005 % +1µA	0.005 % +1µA		
Maximum load		100 V	30 V		
Thermocouples simulation					
Type		R (EN60584-1/ITS90)	S (EN60584-1/ITS90)	B (EN60584-1/ITS90)	J (EN60584-1/ITS90)
Range		-50 °C ... 1768 °C		400 °C ... 1820 °C	-210 °C ... 1200 °C
Error (K)		0.4 (+100 ... 1768 °C)		0.4 (+800 ... 1820 °C)	0.1 (-180 ... 1200 °C)
Type		T (EN60584-1/ITS90)	E (EN60584-1/ITS90)	K (EN60584-1/ITS90)	N (EN60584-1/ITS90)
Range		-200 °C ... 400 °C	-250 °C ... 1000 °C	-200 °C ... 1372 °C	-200 °C ... 1300 °C
Error (K)		0.1 (-100 ... 400 °C)	0.1 (-200 ... 1000 °C)	0.1 (-100 ... 900 °C)	0.2 (-100 ... 900 °C)
Type		M (General Electric IPTS68)	C (Hoskins ITS90)	D (Hoskins ITS90)	G2 (Hoskins ITS90)
Range		-50 °C ... 1410 °C	0.0 °C ... 2315 °C		
Error (K)		0.1 (-50 ... 900 °C)	0.2 (-100 ... 900 °C)	0.2 (300 ... 1100 °C)	0.3 (300 ... 2100 °C)
Resolution		0.01 °C			
Compensation		0.02 °C			
Reference junction		Range	Resolution		
EXTERNAL		-50 °C ... 150°C	0.02 °C	The temperature is measured with an external Pt100 sensor	
RTD simulation (only with -V0001)					
RTD type		Pt100 ... Pt1000, Ni100 ... Ni1000			
Resolution		0.01 °C			
Error limit (1 year)		0.1 °C ... 0.2 °C			
True ohmic resistance simulation (only with -V0001)					
Resistance range		10 Ω ... 300 kΩ, 2 W or 4 W			
Resolution		down to 0.0001 Ω			
Error limit (1 year)		0.02 %			
Frequency output (only with -V0001)					
Range/Resolution		10.0000 - 200.0000 mHz	200.001 - 2000.000 mHz	2.00001 - 20.00000 Hz	20.0001 - 200.0000 Hz
Error limit (1 year)		50 ppm			
Range/Resolution		200.01 mHz - 2000.00 Hz	2.0001 - 4.0000 kHz	4.001 - 10.000 kHz	10.01 - 15.00 kHz
Error limit (1 year)		50 ppm	100 ppm	600 ppm	1500 ppm
Output		Open Collector, max. load 30 V/50 mV or switchable pull-up 100R to +5 V			
Frequency measurement (only with -V0001)					
Measurement range		10 mHz ... 100 kHz			
Frequency resolution		5½ digits			
Error limit (1 year)		50 ppm			
Ambient conditions					
Reference temperature		23 °C ±10 °C (voltage, current, thermocouple simulation and frequency)			
		23 °C ±3°C (RTD and resistance)			
Operating temperature		+5 °C ... 45 °C			
Storage temperature		-10 °C ... 55 °C			
General data					
Communications interface		RS232 (D-sub 9), USB slave port (type B), Ethernet Western socket (RJ45)			
Auxiliary supply		115 V/230 V - 50/60 Hz			
Power consumption	[VA]	60			
Fuse	[230 V]	T315mAL250V			
	[115 V]	T630mAL250V			
Dimensions	[mm]	390 x 128 x 310 (W x H xD)			
Weight	[kg]	5.5			

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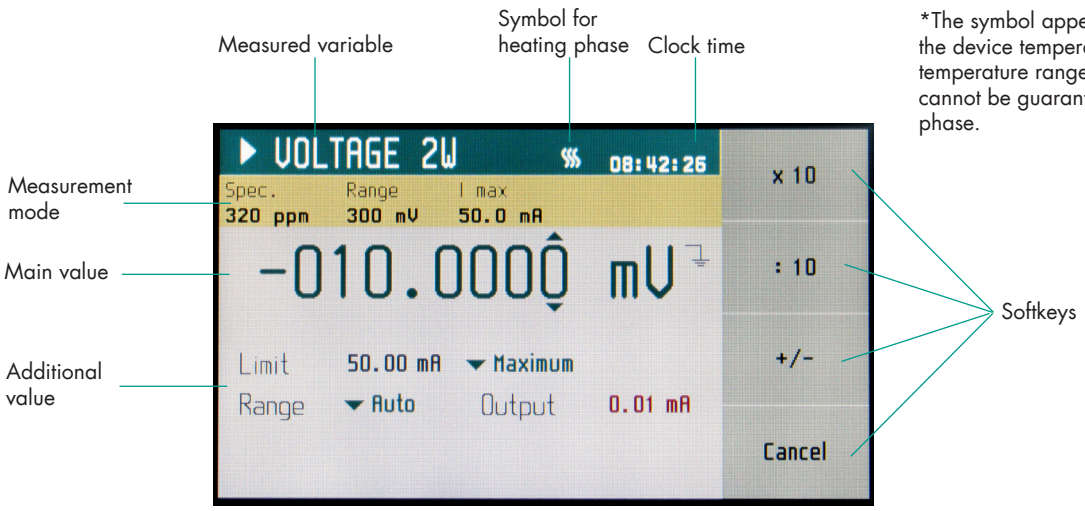
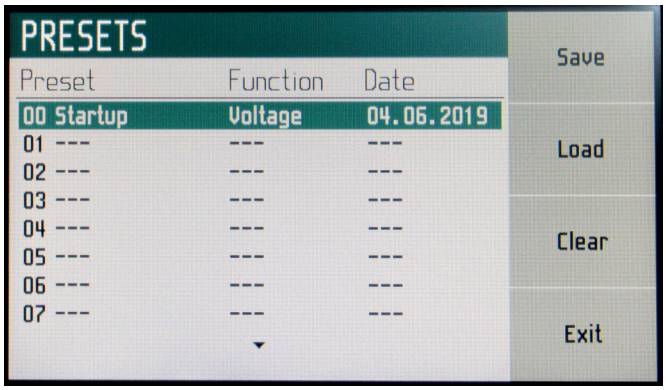
Source main menu

Description



*The symbol appears on the display when the device temperature is outside the rated temperature range. The specified accuracy cannot be guaranteed during the warm-up phase.



Presets is a memory store that retains all settings that would otherwise be lost on restart.

It contains auxiliary and main parameters for all functions.
Up to 100 presets can be stored.

Startup (position 00) loads each time the device starts.

Press the STEP button to start the ramp function.

32 ramps can be stored for each measured variable (time sequences).

Up to 100 steps per sequence can be stored (amplitude/time).

DAkkS certificate for DIGISTANT® 4463

Initial calibration is included with the purchase of this high-precision calibration source device.

The DIGISTANT® 4463 is a high-quality calibration source that comes with a DAkkS certificate. We recommend recalibrating the DIGISTANT® 4463 every 12 months.
Further details are available at: .... (link to product website)

DAkkS
Deutsche Akkreditierungsstelle
D-K-15141-01-00

Technical Data

Measuring points	44DKD-4463-V0000	44DKD-4463-V0001
Voltage	34	34
Current	28	28
Thermocouples	20	20
RTD (measurement)	5	5
RTD (transmission)	-	8
Resistance	-	26
Frequency (measurement)*	-	6
Frequency (transmission)*	-	5

* Separate factory certificate to supplement the DAkkS certificate

External reference junction model 4485-V001 for thermocouples (optional)

- For precision simulation of thermocouples
- Integrated Pt100 for temperature measurement
- Thermically stable and decoupled set-up
- Connection: Miniature female connector

Technical Data

4485-V001	
Tolerance	±0.3 K
Long-term drift (stability)	Typically 0.05 K/year
Insulation resistance between the poles in the disconnected state	≥20 MΩ
Working temperature range	0 °C ... **23 °C** ... 40 °C
Storage temperature range	-10 °C ... 60 °C
Note	Thermo cable and connector cause an additional error. We recommend using Class 1.

DAkkS certificate for external reference junction type 4485-V00X

At 3 points (0 °C, +23 °C and +40 °C). If the reference junction is DAkkS calibrated with the integrated Pt100 sensor and the calculated coefficients are entered in the DIGISTANT® 4463, the additional measurement error for the Pt100 measuring channel can be reduced to ≤0.1 K for a measurement range of +15 °C ... +35 °C.

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Accessories

Order code		
9900-K342		4 measuring leads with particularly low thermoelectric voltage CU/Te safety connectors (with protective sleeve, length 1 m)
9900-K333		RS232 data cable for PC link
4485-V001		External reference junction, 0.3 m cable with LEMO connector
4485-V002		External reference junction, 1 m cable with LEMO connector
9900-K349		USB cable, 1.8 m
9900-K328		BNC connector at both ends, assembled round cable L = 2 m, connector: 2 x BNC, temp. -40 to +90°C,

Calibration

Test and calibration log		
44DKD-4463-V0000		DKD/DAkkS calibration including adjustment and 2nd calibration for -V0000 version (U,I,TC)
44DKD-4463-V0001		DKD/DAkkS calibration including adjustment and 2nd calibration for -V0001 version (U, I, TC, R, RTD, f*)
44DKD-4485		DKD/DAkkS calibration for Pt100 sensor; calibration points: 0 °C, 23 °C and 40 °C
* Separate factory certificate to supplement the DAkkS certificate		
Calibration		
44ABG		Calibrate a measuring chain or input sensor data, only possible in combination with 44DKD-4485 and 4485-V00X

Ordering example

Article number		see order code
4463-V0000		Basic version U, I and TC including DAkkS certificate
4463-V0001		Full version with U, I, TC, RTD, R and f including DAkkS certificate