Delivery: ex stock | Warranty: 24 months

High-Precision Multifunction Calibrator for Voltage, Current, Thermocouples, RTDs, Resistance and Frequency

DIGISTANT® MODEL **4463** NEW



Initial calibration (DAkkS) included

USB

Ethernet



Frontseite



Rückseite mit Anschlüssen

Highlights

- DC voltage ±100 nV ... ±100 V (accuracy from 0.002 %)
- DC current ±100 nA ... ±50 mA (accuracy 0.005 % ±1 µA)
- 12 thermocouple types (accuracy from 0.1 K)
- 32 automatic ramp functions per measured variable, each with 100 values
- LabView driver for software integration

Options

- RTD simulation Pt100 ... Pt1000, Ni100 ... Ni1000
- User-specific RTD profiles
- True ohmic resistance simulation 10 Ω ... 300 kΩ
- Frequency simulation 10 mHz ... 15 kHz
- Frequency measurement 10 mHz ... 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 RTD and thermocouple displays
- Calibration of controllers, sensors and PLC analog inputs
- Calibration of multimeters and other devices

Product description

The DIGISTANT® model 4463 is a high-precision calibration source with impressive versatility and accuracy. Every device is supplied with a DAkkS certificate. Compared to other calibrators, it offers a better error limit of 0.002 % across the entire voltage range.

To achieve consistently high quality levels and conform to standards and regulations, measuring instruments of all kinds require regular calibration. The DIGISTANT® model 4463 provides many of the functions needed for this purpose. Inaccuracies caused by the measuring leads can be compensated via sense lines using 4-wire technology.

All relevant information about the parameter settings and the accuracy being achieved is clearly laid out on the high-resolution color display. The dynamic menu system is navigated intuitively. Range selection is automatic or manual. Values can be entered precisely using the numeric or cursor keypad.

The device can be controlled via its Ethernet, USB or RS-232 port. LabView drivers for software integration are available free of charge. SCPI commands are listed in the user manual. 32 ramp functions per range with 100 value/time sequences can be automatically saved and started.

For thermocouples, scales including ITS-90 and IPTS-68, reference junction type constant or external, can be selected. An optionally available external Pt100 reference junction with calibration data taken into account in the device minimizes thermal EMFs and results in even smaller uncertainties in the measurement chain.

Technical Data

DC voltage					
Range		±300 mV	±3 V	±30 V	±100 V
Resolution		100 nV	1 µV	10 µV	100 µV
Accuracy (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 mA		±50 mA	
Resolution		100 nA			
Accuracy (1 year)		±0.005 % + 1 µA			
Maximum load		100 V		30 V	
Thermocouple simulation					
Type		R (EN60584-1/ITS90)	S (EN60584-1/ITS90)	B (EN60584-1/ITS90)	J (EN60584-1/ITS90)
Range		-50 °C ... +1768 °C	-50 °C ... +1768 °C	+400 °C ... +1820 °C	-210 °C ... +1200 °C
Accuracy (1 year)		±0.3 K (+400 ... +1768 °C)	±0.4 K (+100 ... +1768 °C)	±0.4 K (+800 ... +1820 °C)	±0.1 K (-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
Accuracy (1 year)		±0.1 K (-100 ... +400 °C)	±0.1 K (-200 ... +1000 °C)	±0.1 K (-100 ... +900 °C)	±0.1 K (-100 ... +900 °C)
Type		M (General Electric IPTS68)	C (Hoskins ITS90)	D (Hoskins ITS90)	G2 (Hoskins ITS90)
Range		-50 °C ... +1410 °C	0 °C ... +2315 °C	0 °C ... +2315 °C	0 °C ... +2315 °C
Accuracy (1 year)		±0.1 K (-50 ... +1410 °C)	±0.2 K (+100 ... +900 °C)	±0.2 K (+300 ... +1100 °C)	±0.2 K (+300 ... +2100 °C)
Resolution		0.01 °C			
External reference junction		Range	Resolution	Accuracy (1 year)	-
		-50 °C ... +150°C	0.001 °C	±0.3 K	-
RTD simulation (only with -V0001)					
Type		Pt100 ... Pt1000	Pt100 ... Pt1000	Ni100 ... Ni1000	
Range		-200 ... 0 °C	0 ... +850 °C	-60 ... +300 °C	
Resolution		0.01 °C			
Accuracy (1 year)		±0.15 °C	±0.2 °C	±0.1 °C	
True ohmic resistance simulation (only with -V0001)					
Range		10 Ω ... 20 Ω	200 Ω	1 kΩ	3 kΩ
Resolution		100 µΩ	1 mΩ	10 mΩ	100 mΩ
Accuracy (1 year)		±0,05 % + 15 mΩ	±0,05 % + 15 mΩ	±0,02 % + 0 Ω	±0,02 % + 0 Ω
Range		10 kΩ	30 kΩ	100 kΩ	300 kΩ
Resolution		1 Ω	10 Ω	100 Ω	1 kΩ
Accuracy (1 year)		±0.02 % + 0 Ω	±0.05 % + 0 Ω	±0.1 % + 0 Ω	±0.5 % + 0 Ω
Frequency output (only with -V0001)					
Range		10 ... 200 mHz	2000 mHz	20 Hz	200 Hz
Resolution		100 nHz	1 µHz	10 µHz	100 µHz
Accuracy (1 year)		±0.005 %			
Range		2 kHz	4 kHz	10 kHz	15 kHz
Resolution		10 mHz	100 mHz	1 Hz	10 Hz
Accuracy (1 year)		±0.005 %	±0.01 %	±0.06 %	±0.15 %
Output		Open collector, max. 30 V/50 mA or internal pull-up 100 Ω to +5 V (±10 %)			
Frequency measurement (only with -V0001)					
Range		10 mHz ... 100 kHz			
Frequency resolution		5½ digits			
Accuracy (1 year)		0.005 %			
Ambient conditions					
Reference temperature		23 °C ±10 °C (voltage, current, thermocouple simulation and frequency)			
		23 °C ±2°C (RTD and resistance)			
Operating temperature		+5 °C ... +45 °C			
Storage temperature		-10 °C ... +55 °C			

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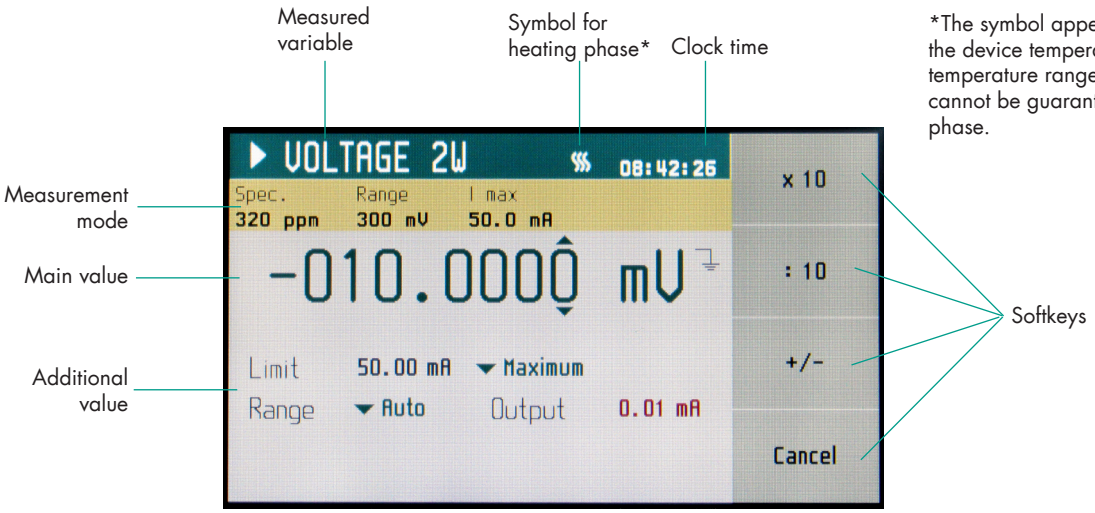
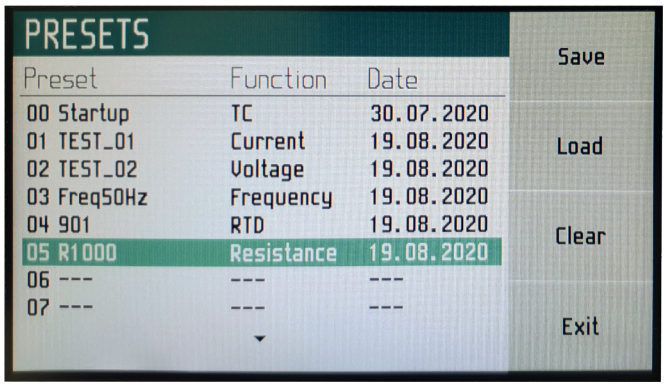
General data		
Communication interface		RS-232 (D-sub 9), USB slave port (type B), Ethernet Western socket (RJ45)
Auxiliary supply		115 V/230 V ±10 %, 47 … 63 Hz
Power consumption max.		60 W
Fuse		230 V: T 315 mA / L 250 V
		115 V: T 630 mA / L 250V
Size		220 x 173 x 320 (W x H x D / mm)
Weight		5.7 kg

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.



Auxiliary and main parameters for all functions can be saved via the presets. Otherwise they would be lost when the device restarts.

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

Up to 100 presets can be saved and used later as required, avoiding the need to re-enter all the parameters. This function is particularly useful for recurring test scenarios, where it saves a lot of time.



Press the STEP button to start the ramp function. Generally it is also possible to control the device remotely and access all functions via the interfaces and LabView drivers, which are available free of charge.

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

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

Accessories

Calibration certificate with accreditation symbol

The initial calibration is included with the purchase of this product.

We recommend a recalibration according to the recalibration deadlines specified.

Further information at: www.burster.com

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

burster calibration services according to the accredited scope of services

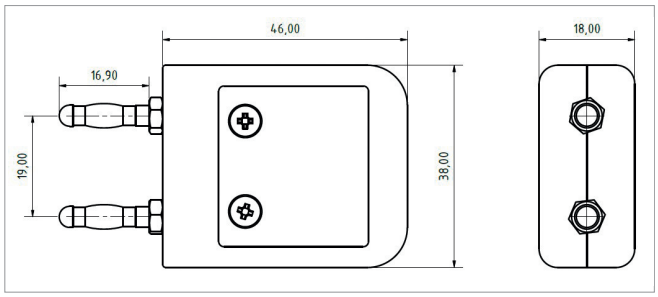
Technical data

Measuring points	44DKD-4463-V0000	44DKD-4463-V0001
Voltage	34	34
Current	28	28
Thermocouple	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 thermo plug connection





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-V001

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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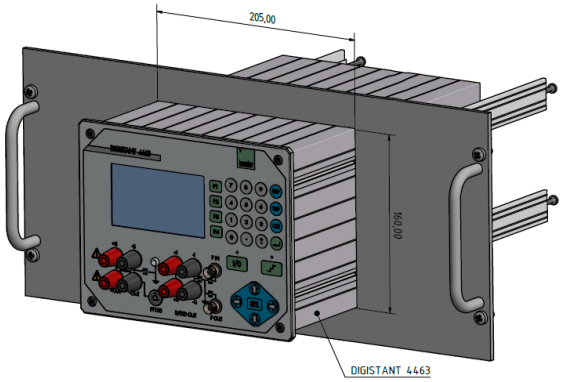
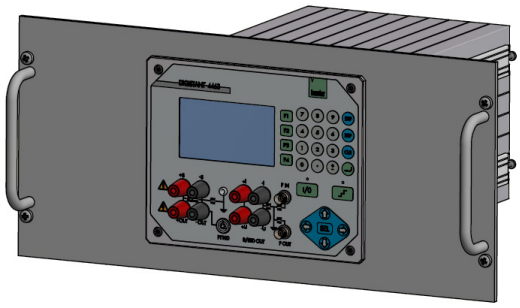
Mounting kit model 4463-Z001

Switch cabinet installation



Complete kit 4463-Z001 incl. 19"/5HE front panel, handles and 4 mounting profiles

Fitted state



Accessories

Order code		
4463-Z001		Mounting plate for 19" rack installation
4485-V001		External reference junction with LEMO connector, 0.3 m cable
9900-K333		RS-232 connecting cable, length 3.0 m
9900-K349		USB connecting cable, length 2.0 m
9900-K328		BNC connecting cable, length 3.0 m

Calibration

Calibration certificates		
44DKD-4463-V0000		DKD/DAkkS calibration including adjustment and 2nd calibration for version -V0000 (U, I, TC)
44DKD-4463-V0001		DKD/DAkkS calibration including adjustment and 2nd calibration for version -V0001 (U, I, TC, R, RTD, f*)
44DKD-4485		DKD/DAkkS calibration for external reference junction (Pt100 sensor); calibration points: 0 °C, +23 °C and +40 °C

* Separate factory certificate to supplement the DAkkS certificate

Calibration of measuring chain		
44ABG		Calibration of 4463 measuring chain with 4485, only possible in combination with 44DKD-4485 and 4485-V001

Order Code

Order number		Functions
4463-V0000		Basic version with U, I and TC incl. DAkkS certificate
4463-V0001		Full version with U, I, TC, RTD, R and f incl. DAkkS certificate