

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

DIGISTANT® MODEL 4463 NEW



Highlights

- DC voltage ± 100 nV ... ± 100 V (accuracy from 0.002 %)
- DC current ± 100 nA ... ± 50 mA (accuracy 0.005 % ± 1 μ A)
- 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 k Ω
- 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.

Initial calibration (DAkkS) included



USB

Ethernet



Frontseite



Rückseite mit Anschlüssen

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 kΩ | 200 kΩ | 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 | | | |

| General data | |
|-------------------------|---|
| Communication interface | RS-232 (D-sub 9), USB slave port (type B), Ethernet Western socket (RJ45) |
| Auxiliary supply | 115 V/230 V $\pm 10\%$, 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.

| PRESETS | | | Save |
|-------------|------------|------------|-------|
| Preset | Function | Date | |
| 00 Startup | TC | 30.07.2020 | Load |
| 01 TEST_01 | Current | 19.08.2020 | |
| 02 TEST_02 | Voltage | 19.08.2020 | Clear |
| 03 Freq50Hz | Frequency | 19.08.2020 | |
| 04 901 | RTD | 19.08.2020 | Exit |
| 05 R1000 | Resistance | 19.08.2020 | |
| 06 --- | --- | --- | |
| 07 --- | --- | --- | |

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



burster calibration services according to the accredited scope of services

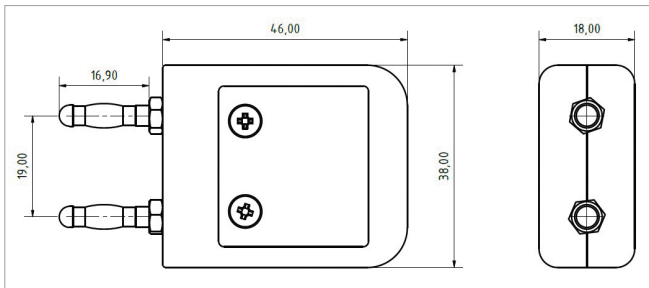
Technical data

| Measuring points | 44DKD-4463-V000 | 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
- Thermally stable and decoupled set-up
- Connection: Miniature thermo plug connection

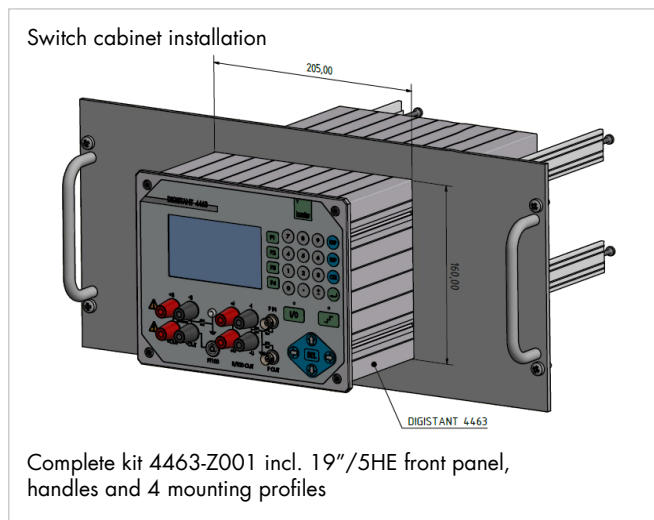


Technical data

| 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.

Mounting kit model 4463-Z001**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 |

Volume discount*

| Discount scale | |
|-----------------------|-----|
| 2 units | 2 % |
| 3 units | 3 % |
| 5 units | 4 % |
| For larger quantities | POA |

* when purchasing identical versions in a single order

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 |