



CP 6632

Handheld process signal calibrator



CP 6632 is a handheld accurate process signal calibrator (150 ppm reading accuracy) that measures or generates process current and voltage. Robust and easy-to-use, this instrument has been designed to make maintenance operations easier on sensors and transmitters using process signals such as 4-20 mA or 0-10 V.

Description

CP 6632 is a handheld accurate calibrator for process signals (150 ppm reading accuracy) that measures or generates process current and voltage. Robust and easy-to-use, this instrument has been designed to make maintenance operations easier on sensors and transmitters using process signals such as 4-20 mA or 0-10 V.

The instrument is adapted to the various process installations due to scaling function and specific ranges. It can simulate ramps, steps and fixed values to control process transmitters, panel meters and recorders.

Temperature coefficients are low: 15 ppm /°C in voltage and 20 ppm/°C in current. The high accuracy of 150 ppm makes CP 6632 an ideal standard for onsite use even in demanding environmental conditions.

CP 6632 is delivered with 4 alkaline AA batteries in standard. The optional battery charger used a rechargeable battery.

Key features:

- High accuracy: 0.015% reading with an adjustable resolution of 1 mV and 1 μA
- Values displayed in A, mV and %
- Low temperature coefficient: 15 ppm /°C in voltage and 20 ppm/°C in current
- Active or passive loop power supply
- Measurements with HOLD function
- Simulation of ramps, preprogrammed steps and synthetizer values
- Display of minimum, maximum and average value
- Backlight



Specifications

Specifications and performances @23°C ±5°C

DC voltage: Measurement

| Range | Measuring range | Resolution | Accuracy / 1yr |
|----------|-----------------|------------|-------------------|
| 0 - 10 V | -2 / 12 V | 1 mV | 0.015% RDG + 2 mV |
| 25 V | -2 / 25 V | 1 mV | 0.015% RDG + 2 mV |
| 50 V | -5 / 50 V | 1 mV | 0.015% RDG + 4 mV |

Temperature coefficient: < 15 ppm/°C beyond reference domain

 $Rin = 1 M\Omega \pm 1\%$

Common mode rejection: 120 dB at 50 and 60 Hz

DC voltage: Emission

| Range | Emission range | Resolution | Accuracy / 1yr |
|----------|----------------|------------|-------------------|
| 0 - 10 V | 0 / 12 V | 1 mV | 0.015% RDG + 2 mV |
| 15 V | 0 / 15 V | 1 mV | 0.015% L + 2 mV |

Temperature coefficient: < 15 ppm/°C beyond reference domain

Rising time: < 1 ms (0 V to 15 V accross 1 M Ω load)

Internal resistance: $\leq 1 \Omega$

VLF Noise: < 1 mVcc (at F < 100 Hz)

DC current: Measurement

With or without loop supply

| Range | Measuring range | Resolution | Accuracy / 1an |
|---------|-----------------|------------|-------------------|
| 0-20 mA | -6 / 24 mA | 1 μΑ | 0.015% RDG + 2 μA |
| 4-20 mA | 3.2 / 24 mA | 1 μΑ | 0.015% RDG + 2 μA |
| 25 mA | -6 / 25 mA | 1 μΑ | 0.015% RDG + 2 μA |

Temperature coefficient: < 20 ppm/°C beyond reference domain

Loop power supply: $24 \text{ V} \pm 10\%$

HART® compatibility: $R = 250 \Omega \pm 5\%$

Rin $< 30 \Omega$

Common mode rejection: 120 dB at 50 and 60 Hz

DC current: Emission

With or without loop supply

| Range | Emission range | Resolution | Accuracy / 1yr |
|---------|----------------|------------|-------------------|
| 0-20 mA | 500 μA / 24 mA | 1 μΑ | 0.015% RDG + 2 μA |



| 4-20 mA | 3.2 / 24 mA | 1 μΑ | 0.015% RDG + 2 μA |
|---------|----------------|------|-------------------|
| 25 mA | 500 μA / 25 mA | 1 μΑ | 0.015% RDG + 2 μA |

Temperature coefficient: < 20 ppm/°C beyond reference domain

Rising time: $< 500 \mu s$ (0 to 20 mA accross 20 Ω load)

VLF Noise: $< 1 \mu A$ (at F < 100 Hz)

Continuity test

Preset step emission and valve test Configuration of steps or increments with adjustable frequency Linearity tests over linear or quadratic signals

| 0% | 25% | 50% | 75% | 6 10 | 0% | | | |
|--------|-----------|-----|---------|------|----|-------|--------|----|
| 4-20 n | nA linear | | 4 | 8 | 12 | 16 | 20 | |
| 0-20 n | nA linear | | 0 | 5 | 10 | 15 | 20 | |
| 4-20 n | nA quad | | 4 | 5 | 8 | 13 | 20 | |
| 0-20 n | nA quad | | 0 | 1.25 | 5 | 11.25 | 20 | |
| 4-20 n | nA valves | 3.8 | 3-4-4.2 | | 12 | 1 | 9, 20, | 21 |

Further features

| Scaling in measurement and simulation modes | This function allows sensors to be corrected after a calibration. Scaling is performed using up to 10 segments, in order to fit with the real calibrated value. |
|---|--|
| HART compatibility | Equipped with a non-disturbing digital transmission resistance, it is possible to measure the current output of any transmitter using HART protocol. |
| Statistical functions | Continuous display of average, minimum and maximum value of the signal under monitoring, as well as number of measurements. |
| Simple and cyclical ramp generation | Ramps can be generated by setting low and high dwell, rising and falling times, stabilization and delay times (1 to 3,600 s). Delay time enables a single user to launch the ramp and go to the control panel. |
| Steps simulation | This mode allows predefined values to be sent with programmable amplitude and frequency. |
| Square root | In current measurement and simulation, this function allows taking into account a quadratic signal coming from transmitter of type ΔP . |

General specifications

| Size | 157 x 85 x 45 mm |
|---------|--|
| Weight | 306 g |
| Display | 160 x 160 pixel liquid crystal graphical display |



| | with backlite Display of result as table of values or trend curve |
|---------------------|---|
| Power supply | 4 AA batteries 1.5 V or rechargeable Ni-Mh batteries with internal charger in option Autonomie: > 53 h en mesure tension et courant et simulation tension > 12 h en simulation courant |
| Communication ports | USB |

Environmental specifications

| Reference range | 23°C ± 5°C (RH: 45 to 75 % w/o condensing) |
|----------------------------|--|
| Operating reference range | -10 to 50°C (RH: 20 to 80 % w/o condensing) |
| Limit operating range | -15°C to +55°C (RH: 10 to 80 % w/o condensing) (70% at 55°C) |
| Storage temperature limits | -30°C to +60°C |
| Maximum height | 0 to 2,200 m |
| IP protection | IP54 according to EN60529 |

Safety specifications

Protections

- Electronic protection up to 250 V for 'voltage' wires
- Fuse protection for 'current' wires
- Protection against 'current' circuit breaking during inductive resistance measurements

Class In accordance with EN 61010-1 Category II, pollution 2

Rated voltage 60 V

Chocks and vibrations EN 61010-1

EMC conformity



Models and accessories

Instruments:

CP 6632 Handheld process calibrator for voltage and current

Delivered in standard with:

- User manual
- 4 AA batteries
- 2 cables and crocodile clips
- Protection sheath
- Carrying strap
- Factory test report

Accessories:

AC6908 Soft carrying case for hand-held instruments

AN6011 Charger + batteries for hand-held instruments

Certification:

QMA11EN COFRAC certificate of calibration

With all relevant data points where the device has been tested

Packing information:

Size 157 x 85 x 45 mm

Weight without packing 306 g