# LEO Ultimate

## High-precision digital pressure gauge with accuracy up to 0,01 %FS


### Key features

- Accuracy up to 0,01 %FS
- Absolute and relative pressure measurement
- Data logger with high storage capacity
- USB-C and Bluetooth connectivity
- Large backlit LCD with excellent readability
- Premium buttons with tactile feedback
- Robust and elegant metal housing

### Functions

- 5 Measuring Modes: Standard, Peak, Leak, Rate, Alarm
- Intuitive menu navigation and shortcut functions
- Two bar graphs for full-scale and dynamic ranges
- Advanced functions via mobile and desktop apps
- Powered by standard AA batteries
- External power via USB-C

### Typical applications

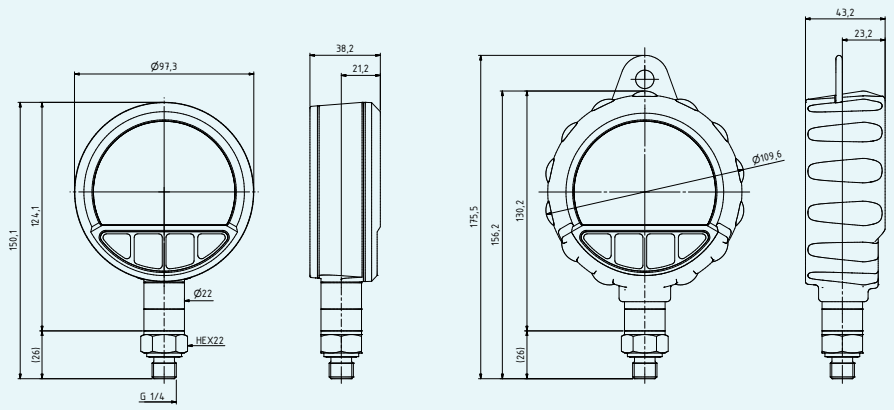
- Calibration reference in laboratories and service centers
- On-site pressure verification and field testing
- Commissioning and maintenance of pressure systems
- Reference gauge for hydraulic and pneumatic systems

**Accuracy**
± 0,05 %FS / optional ± 0,01 %FS

**Total error band**
± 0,05 %FS @ 0...50 °C

**Pressure ranges**
-1…1 bar to 0…1000 bar / -15…15 psi to 0…15000 psi

**LEO Ultimate**




**Edition 09/2026**
Subject to alterations
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Find your local contact at keller-pressure.com

# LEO Ultimate – Specifications

Every LEO Ultimate can measure absolute pressure and relative pressure. The pressure display can be switched as required.
The performance specifications refer to the extended absolute pressure range[1]. The default setting is the absolute pressure range[2].

## Standard pressure ranges [bar]

| Orderable pressure range | Proof pressure | Display options | | | |
|---|---|---|---|---|---|
| | | Pressure range | | Extended pressure range | |
| | | Absolute[2] | Relative | Absolute[1] | Relative |
| 1 | 3 | 0…1 | 0…1 | 0…2 | -1…1 |
| 1,6 | 9 | 0…1,6 | 0…1,6 | 0…2,6 | -1…1,6 |
| 2,5 | 9 | 0…2,5 | 0…2,5 | 0…3,5 | -1…2,5 |
| 4 | 9 | 0…4 | 0…4 | 0…5 | -1…4 |
| 6 | 30 | 0…6 | 0…6 | 0…7 | -1…6 |
| 10 | 30 | 0…10 | 0…10 | 0…11 | -1…10 |
| 16 | 90 | 0…16 | 0…16 | 0…17 | -1…16 |
| 25 | 90 | 0…25 | 0…25 | 0…26 | -1…25 |
| 40 | 90 | 0…40 | 0…40 | 0…41 | -1…40 |
| 60 | 300 | 0…60 | 0…60 | 0…61 | -1…60 |
| 100 | 300 | 0…100 | 0…100 | 0…101 | -1…100 |
| 160 | 300 | 0…160 | 0…160 | 0…161 | -1…160 |
| 250 | 1200 | 0…250 | 0…250 | 0…251 | -1…250 |
| 400 | 1200 | 0…400 | 0…400 | 0…401 | -1…400 |
| 600 | 1200 | 0…600 | 0…600 | 0…601 | -1…600 |
| 1000 | 1200 | 0…1000 | 0…1000 | 0…1001 | -1…1000 |
| **bar** | **bar** | **bar** | **bar** | **bar** | **bar** |

## Standard pressure ranges [psi]

| | | | | | |
|---|---|---|---|---|---|
| 15 | 43 | 0…15 | 0…15 | 0…30 | -15…15 |
| 25 | 130 | 0…25 | 0…25 | 0…40 | -15…25 |
| 40 | 130 | 0…40 | 0…40 | 0…55 | -15…40 |
| 60 | 130 | 0…60 | 0…60 | 0…75 | -15…60 |
| 100 | 435 | 0…100 | 0…100 | 0…115 | -15…100 |
| 150 | 435 | 0…150 | 0…150 | 0…165 | -15…150 |
| 250 | 1300 | 0…250 | 0…250 | 0…265 | -15…250 |
| 400 | 1300 | 0…400 | 0…400 | 0…415 | -15…400 |
| 600 | 1300 | 0…600 | 0…600 | 0…615 | -15…600 |
| 1000 | 4350 | 0…1000 | 0…1000 | 0…1015 | -15…1000 |
| 1500 | 4350 | 0…1500 | 0…1500 | 0…1515 | -15…1500 |
| 2500 | 4350 | 0…2500 | 0…2500 | 0…2515 | -15…2500 |
| 4000 | 17400 | 0…4000 | 0…4000 | 0…4015 | -15…4000 |
| 6000 | 17400 | 0…6000 | 0…6000 | 0…6015 | -15…6000 |
| 10000 | 17400 | 0…10000 | 0…10000 | 0…10015 | -15…10000 |
| 15000 | 17400 | 0…15000 | 0…15000 | 0…15015 | -15…15000 |
| **psi** | **psi** | **psi** | **psi** | **psi** | **psi** |

| Reference pressure at vacuum | Reference pressure at atmospheric pressure | Reference pressure at vacuum | Reference pressure at atmospheric pressure |
|---|---|---|---|

# LEO Ultimate – Specifications

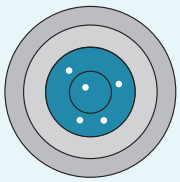
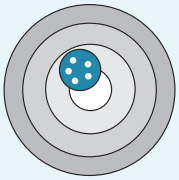
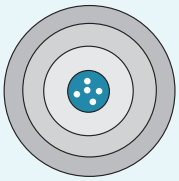
## Performance

| | | |
|---|---|---|
| Accuracy @ RT (20…25 °C) | ≤ ± 0,05 %FS | Non-linearity (best fitted straight line BFSL), pressure hysteresis, non-repeatability, zeropoint and gain deviation |
| Total error band (0…50 °C) | ≤ ± 0,05 %FS | Maximum deviation within the compensated pressure and temperature range. |
| Compensated temperature range | 0…50 °C | |
| Long-term stability | ≤ ± 0,1 %FS | Per year under reference conditions; annual recalibration recommended. |
| Position dependence | ≤ ± 1,5 mbar | Calibrated in vertical position with pressure connection facing downwards. |
| Pressure range reserve | ± 10 % | Valid measured values outside the pressure range; no overflow or underflow yet. |
| Temperature measurement accuracy | ± 1 °C typ. | |

## Enhanced precision / accuracy (optional)

For defined pressure ranges, KELLER Pressure can optionally achieve maximum reproducibility (precision) through additional measurement effort and selection of the pressure transducers. In addition, some products can be adjusted by an accredited calibration laboratory to the laboratory's higher-accuracy pressure sources.

| | | | |
|---|---|---|---|
| Precision @ RT (20…25 °C) | ≤ ± 0,025 %FS | For all absolute standard pressure ranges ≥ 10 bar (exception 40 and 60 bar) | With a calibration certificate from KELLER Pressure ex works. |
| | ≤ ± 0,01 %FS | For absolute pressure ranges 10, 16, 100, 1000 bar | |
| Accuracy @ RT | ≤ ± 0,025 %FS | For all absolute standard pressure ranges ≥ 10 bar (exception of 40 and 60 bar) | With DakkS certificate from an external calibration laboratory. |
| | ≤ ± 0,01 %FS | For absolute pressure ranges 10, 16, 100, 1000 bar | |

| | |
|---|---|
|  | Accuracy ± 0,05 %FS, with KELLER Pressure factory calibration certificate (standard)<br><br>KELLER Pressure uses pressure sources for product adjustment that are several times more accurate than the product under test. This allows products to be adjusted at the factory to an absolute accuracy of up to ± 0,05 %FS. |
|  | Precision ± 0,01 %FS / ± 0,025 %FS, with KELLER Pressure factory calibration certificate.<br><br>For selected pressure ranges, maximum reproducibility is achieved through additional measurement effort and selection of the pressure sensors. For such high-precision instruments, KELLER Pressure uses the term «precision» to describe the ability of the instrument to reproduce measured values to within 0,01 %FS relative to the factory pressure sources. |
|  | Accuracy 0,01% FS / 0,025% FS with DakkS certificate, issued by an external accredited calibration laboratory.<br><br>By adjusting zero point and gain via the digital interface, the instrument can be adjusted and certified by an accredited calibration laboratory using the laboratory's higher-accuracy pressure sources. External calibration is performed in accordance with DKD guidelines under reference conditions and without taking long-term effects into account. |

# LEO Ultimate – Specifications

## Electrical specifications

| | |
|---|---|
| Battery | 2 × 1,5 V Mignon AA,<br>Energizer Ultimate Lithium |
| Battery life | > 3500 h (default settings) |
| Electrical connection | USB-C |
| Electrical interface | USB 2.0 (12Mbit/s) |
| External power supply | 5 VDC / 50 mA |
| Communication protocol | USB CDC (Virtual COM Port) |
| GND - CASE isolation | > 10 MΩ @ 500 VDC |

Bluetooth

| | |
|---|---|
| Technology type | Bluetooth® Low Energy 5.4 |
| Frequency range | 2402 – 2480 MHz |
| Channel spacing | 2 MHz |
| Maximum transmit power | +6 dBm |
| Antenna type | Integrated chip antenna |

Data logger

| | |
|---|---|
| Selectable measurement modes | Standard (Min/Max), Leak, Peak, Rate, Alarm |
| Storage channels | Absolute pressure, Relative pressure, Temperature |
| Data memory | 800'000 readings |
| Storage interval | Configurable: Up to 50 times per second |
| Storage modes | Stop When Full / Overwrite |

## LC-Display

| | |
|---|---|
| Number of digits on the main display | Adjustable from 4 to 5 1/2 digits |
| Left bar graph | Full-scale pressure display |
| Right bar graph | Configurable: Dynamic pressure range display with drag indicator |
| Display interval | Configurable: ≤ 10/s |
| Selectable pressure units | bar, mbar, psi, Pa, kPa, MPa, mH2O, mmH2O, inH2O, ftH2O, mmHg, inHg, kgf/cm² |
| Additional pressure units | 5 custom pressure units configurable via software |
| Menu language | English |

Electromagnetic compatibility

| | | |
|---|---|---|
| CE conformity in accordance with 2014/30/EU | CE | EN IEC 61326-1 / EN IEC 61326-2-3 / EN IEC 61000-6-1 /<br>EN IEC 61000-6-2 / EN IEC 61000-6-3 / EN IEC 61000-6-4 |

Radio Equipment Directive

| | | |
|---|---|---|
| EU (CE / RED) | CE | EN IEC 62368-1, EN 300 328, EN 301 489-1,<br>EN 301 489-17, EN 62311, EN 62479 |
| USA (FCC) / Canada (ISED) | FC | 47 CFR Part 15B, 47 CFR Part 1.1310 / 2.1093<br>ICES-003, RSS-102 |
| Japan | | JRF certification: 217-220682 |
| Australia / New Zealand | | Australia: ABN 81 145 810 206<br>New Zealand: Company no. 090887882 |

# LEO Ultimate – Specifications

## Mechanical specifications

Materials in contact with media

| | | |
|---|---|---|
| Pressure connection | Stainless steel AISI 316L | ≤ 415 bar (6000 psi) |
| | Stainless steel AISI 318LN, 1,4462 | > 415 bar (6000 psi) |
| Separating diaphragm pressure transducer | Stainless steel AISI 316L | |
| Seal, pressure transducer (internal) | None | If the “Precision or increased accuracy” option is selected: FKM (-20…200 °C) |
| Seal, pressure connection (external) | FKM (75 Shore, -20…200 °C) | |

Other materials

| | |
|---|---|
| Display housing | Die-cast zinc, nickel-plated |
| Front glass | PMMA |
| Push-buttons | VMQ |
| Protective cover | NBR-PVC |
| Mounting bracket protective cover | PA12 |
| Oil filling pressure transducer | Silicone oil |

Further details

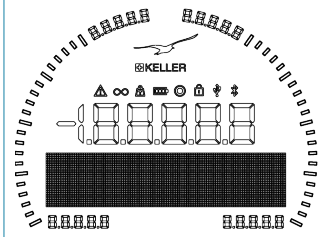
| | |
|---|---|
| Pressure connection | G1/4 male, G1/2 male, 1/4-18NPT male, G1/4 mano EN 837, G1/2 mano EN 837 |
| Diameter x Height x Depth | approx. 96,9 x 150,1 x 38,2 mm<br>Without rubber protective cover, process connection G1/4, standard version |
| Weight (approx.) | approx. 720g (incl. batteries, without protective cover)<br>approx. 800g (incl. batteries, with protective cover) |

Ambient conditions

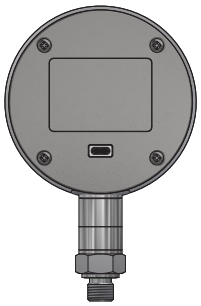
| | | |
|---|---|---|
| Media temperature range | -20…85 °C | Icing not permitted. |
| Ambient temperature range | -10…70 °C | |
| Storage temperature range | -20…80 °C | |
| Note | The readability of the display is guaranteed between -10 °C and 70 °C. Outside this temperature range, the display is only partially legible. | |
| Protection class | IP67 | |
| Load cycles @ RT (20...25°C) | > 10 million pressure cycles | 0...100 %FS |
| Vibration resistance | 5 g, 10…500 Hz | IEC 60068-2-6 |
| Shock resistance | 50 g, 6 ms | IEC 60068-2-27 |
| Humidity | DIN EN IEC 60068-2-78, Severity level IV | The protective cover must be used for outdoor applications or where there is an increased risk of corrosion. |
| Salt spray | DIN EN ISO 1456, Stufe 1 | |

# LEO Ultimate – Dimensions and variants

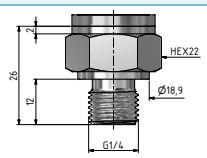
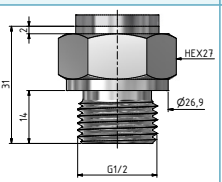
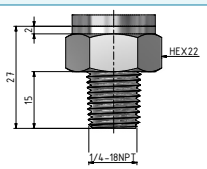
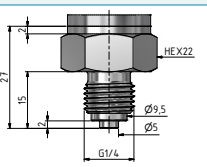
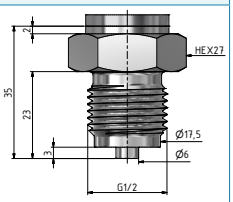
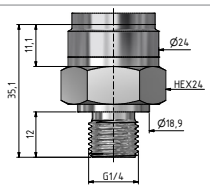
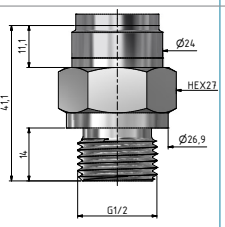
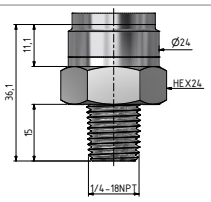
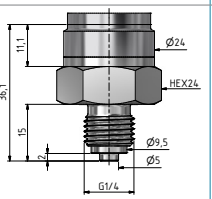
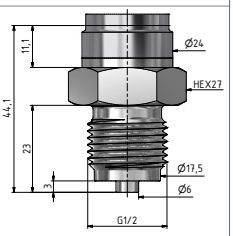
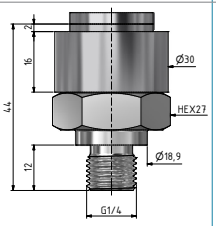
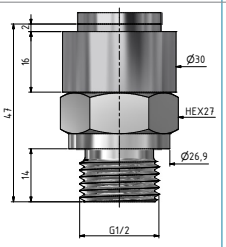
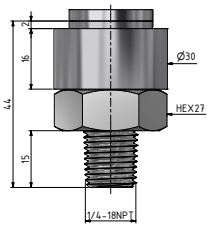
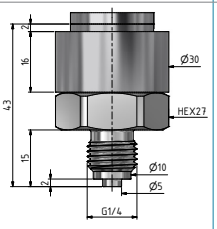
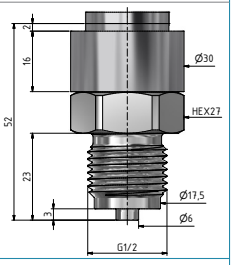
### LC-Display

| Content | Dimensions |
|---|---|
|  | **Outer diameter**<br>Size: 76,8 mm<br><br>Digit size, main display:<br>10,2 x 6,1 mm<br><br>**DOT matrix field**<br>Size: 59,8 x 13,45 mm<br>Number of dots: 30 x 133<br><br>A detailed description of the functions of individual segments can be found in the operating instructions. |

### Electrial connection

| Position | USB-C, IP67 |
|---|---|
|  |  |

### Available pressure connections

| | G1/4 male | G1/2 male | 1/4-18NPT male | G1/4 mano | G1/2 mano |
|---|---|---|---|---|---|
| For pressure ranges ≤ 160 bar |  |  |  |  |  |
| For pressure ranges > 160 bar |  |  |  |  |  |
| For variants with enhanced precision / accuracy |  |  |  |  |  |
| | DIN EN ISO 1179-2 | DIN EN ISO 1179-2 | ASME/ANSI B 1.20.1 | DIN EN 837 | DIN EN 837 |

# LEO Ultimate – Software

## PressureSuite Mobile

With the ‘PressureSuite Mobile’ app for Android and iOS, recorded data from KELLER Pressure products with a recording function can be read out and visualised wirelessly via Bluetooth. The app enables the further processing and documentation of measurement data, which can be exported in formats including CSV, JSON, image and others.

Thanks to the clear and intuitive user interface, the devices are easy to configure. The various recording functions allow for optimal adaptation to the specific measurement task. For direct conversion of the measurement results after reading, information about the measurement point, such as parameters for water level calculation, can be stored directly in the measuring device.

PressureSuite Mobile is licence-free and compatible with all PressureSuite Bluetooth products. The mobile application is optimised for field use and enables wireless communication with the measuring instruments without the need for additional hardware.

Configuration options via PressureSuite Mobile
- Measurement modes: Standard (Min/Max), Leak, Peak, Rate, Alarm
- Selectable pressure and temperature channels
- Adjustable measurement and storage interval
- Display settings: units, number of digits, display interval, timeouts, contrast, alarms, …
- Adjustment of the pressure zero point

Data logger functions
- Continuous interval measurement
- Start and stop measurement immediately or at a defined time
- Data storage modes: Stop When Full or Overwrite

## PressureSuite Desktop

The ‘PressureSuite Desktop’ Windows software is used to read out and visualise recorded data from KELLER Pressure pressure transmitters with a recording function. The measurement data can be exported for further processing or documentation as CSV, JSON, image, Excel, Word report and in other formats. Thanks to the software’s clear user interface, the devices are easy to configure and the various recording functions allow for optimal adaptation to the measurement task. To convert measurement results immediately after reading, information about the measurement point, such as parameters for water level calculation, can be stored directly in the measuring instrument. PressureSuite Desktop is licence-free and compatible with all PressureSuite products.

Configuration options via PressureSuite Desktop
- Measurement modes: Standard (Min/Max), Leak, Peak, Rate, Alarm
- Selectable pressure and temperature channels
- Adjustable measurement and storage interval
- Display settings: units, decimal places, display interval, timeouts, contrast, alarms, …
- Adjustment of the pressure zero point

Data logger functions
- Continuous interval measurement
- Start and stop measurement immediately or at a defined time
- Data storage modes: Stop When Full or Overwrite

# LEO Ultimate – Contents and accessories

## Scope of Delivery

| USB cable | USB adapter | Batteries | Calibration certificate | Copper seals | |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| USB-C male to USB-C male 90° (0.5m) | USB-A male to USB-C female | 2 × Energizer Ultimate Mignon AA lithium batteries 3000 mAh, 1,5 V (already installed in the device) | With 5 measurement points<br><br>Measurement deviation at room temperature | For G 1/4 mano EN 837 with centring pin | For G 1/2 mano EN 837 with centring pin |

## Accessories

| Protective caps | | Adapter nipples | Service case | EPDM profile gaskets | |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| Without mounting bracket<br><br>For additional protection in harsh environments | With mounting bracket<br><br>For additional protection in harsh environments | For calibration<br><br>For direct attachment of the barometer | For transport and storage | For G 1/4 male | For G 1/2 male |

| Calibration certificates | |
|---|---|
|  |  |
| With 11 measuring points<br><br>Measurement deviation at room temperature with hysteresis | External<br><br>Issued by an external, accredited calibration laboratory in accordance with DAkkS or SAS |

# LEO Ultimate – Order Overview

Each LEO Ultimate can be configurated according to the following criteria – for maximum precision, robustness and flexibility in everyday use.

| | Pressure range | Pressure connection | Data logger | Accuracy | Precision |
|---|---|---|---|---|---|
| **LEO Ultimate Standard** | (as per order) | G1/4 male | with data logger | 0,05 %FS | Standard |
| **Alternatives** | 1 bar | G1/2 male | without data logger | 0,025 %FS | 0,025 %FS |
| | 1,6 bar | 1/4-18-NPT male | | 0,01 %FS | 0,01 %FS |
| | 2,5 bar | G1/4 mano EN 837 | | | |
| | 4 bar | G1/2 mano EN 837 | | | |
| | 6 bar | | | | |
| | 10 bar [1,2] | | | | |
| | 16 bar [1,2] | | | | |
| | 25 bar [2] | | | | |
| | 40 bar | | | | |
| | 60 bar | | | | |
| | 100 bar [1,2] | | | | |
| | 160 bar [2] | | | | |
| | 250 bar [2] | | | | |
| | 400 bar [2] | | | | |
| | 600 bar [2] | | | | |
| | 1000 bar [1,2] | | | | |
| | 15 psi | | | | |
| | 25 psi | | | | |
| | 40 psi | | | | |
| | 60 psi | | | | |
| | 100 psi | | | | |
| | 150 psi [1,2] | | | | |
| | 250 psi [1,2] | | | | |
| | 400 psi [2] | | | | |
| | 600 psi | | | | |
| | 1000 psi | | | | |
| | 1500 psi [1,2] | | | | |
| | 2500 psi [2] | | | | |
| | 4000 psi [2] | | | | |
| | 6000 psi [2] | | | | |
| | 10000 psi [2] | | | | |
| | 15000 psi [1,2] | | | | |

[1] Available with an accuracy or precision of 0,01 %FS

[2] Available with an accuracy or precision of 0,025 %FS