

Watermanager solution
DL.WMS/GPRS/R



Version: 28.03.2012

Technical specifications datalogger

Data transmission

| | |
|-------------------------------------|--|
| Version with GSM/GPRS Engine | Quadband |
| GPRS frequency bands | GPRS 850 MHz, GPRS 900 MHz, GPRS 1800 MHz, GPRS 1900 MHz |
| Transmission power | Class 4 (2 W) at GPRS, class 1 (1W) at GPRS 1800 and GPRS 1900 |
| SIM card | supports 3 V SIM cards |
| Antenna | 1/4λ stub antenna: 900 / 1800 MHz or 1900 MHz (Gain 0 / 0 dB), planar antenna: 900 / 1800 MHz (0 / 0 dB) |
| Transmission | m2m (machine to machine) protocol |

Datalogger

| | |
|------------------------------|---|
| Housing | Stainless steel (316L / 1.4404) / Murytal C |
| Antenna connector | FME (male) |
| Interface | Radio 433 MHz |
| Power supply | 2 x 1.5 V alkali or 1 x 3.6 V lithium / size D, (battery can be changed on-site) |
| Operating temperature | -25...85°C |
| Humidity | 0...100% relative H, protection class IP68 (1 m/24 h) with closed protection cap and connected sensor |
| Measurands | Pressure and temperature |
| Resolution | |
| Pressure | 0.01% FS |
| Temperature | 0.05 °C |
| Data memory | Up to 250'000 measurement values, non-volatile, data remain in memory even without battery, each measurement value is correlated with time and date |
| Identification | Each datalogger has a unique serial number, as well as a user-definable description |
| Server automation | Database administration, online data overview |
| Database | PostgreSQL, MySQL |
| Status monitor | Humidity and temperature in the housing, battery voltage, signal strength, memory allocation, latest data transfer, GPS position |
| Application interface | WISKI, HydroPro, CSV, Excel |

| | |
|--------------------------|---|
| Data query | Automatic data query and administration of datalogger |
| Access security | 1 level with password protection |
| Alarm function | Transmission of several alarms via SMS and E-Mail |
| Data transmission | GPRS / m2m (machine to machine) protocol |
| Configuration | Sample- and storage rate, Identification (f.e. measuring site), Tare; the datalogger stores the height of the air column, and not the pressure at the sensor, Taring of measurement value; define threshold values, Alarm threshold value; Storage of the measurement data within the defined range, Density of the measuring medium; Set the density of the measuring medium, which is automatically calculated in as well |
| Data format | Data are stored in ASCII or CSV format and can be read with all common programs such as Excel, Lotus, etc. |

System Requirements

| | |
|-------------------------|--|
| PC | Processor: Min. 200 MHz Memory: Min. 50 MB RAM: Min. 64 MB |
| Operating system | Windows 2000 (Service Pack 4) / XP (Service Pack 3/32-Bit) / Vista (32-Bit) / 7 (32-Bit) |

Qualifications

| | Description | Level | Typical interferences |
|---------------------|-------------------------|---|-----------------------|
| EN 61000-4-2 | Electrostatic discharge | 4 kV contact 8 kV air | |
| EN 61000-4-4 | Transients (burst) | 2 kV | Motors, valves |
| EN 61000-4-5 | Surge | Line-Line: 0.5 kV/42 Ω Line-Earth: 1 kV/42 Ω | Lightning |

Technical specifications ATM.WMS

Pressure measuring range (mH₂O)

| | 1 ... 5 | > 5 ... 20 | > 20 ... 250 |
|-----------------------------------|----------------------|----------------------|-----------------------|
| Overpressure | 3 bar | 3 x FS (≥ 3 bar) | 3 x FS |
| Burst pressure | > 200 bar | > 200 bar | > 200 bar |
| Accuracy, (1), (± %FS) | ≤ 0.25 / ≤ 0.1 | ≤ 0.25 / ≤ 0.1 | ≤ 0.25 / ≤ 0.1 |
| Total Error, (2), (± % FS) | | | |
| -5...50°C (typ. / max.) | 0.8 / 1.0 | 0.3 / 0.5 | 0.3 / 0.5 |
| -5...80°C (typ. / max.) | 1.3 / 1.5 | 0.75 / 1.0 | 0.75 / 1.0 |
| Response time, (typ.) | < 1ms / 10...90% | < 1ms / 10...90% | < 1ms / 10...90% |
| Long term stability, (3) | < 0.5% FS / < 4 mbar | < 0.2% FS / < 4 mbar | < 0.1% FS / < 0.2% FS |

(1) Zero based accuracy according to DIN16086, incl. hysteresis and repeatability at ambient temperature

(2) Total error including accuracy and temperature influences at maximum signal span (2 V DC)

(3) 1 year (typ. / max.), the long term stability can be improved by ageing (burn-in) the sensor

Temperature measuring range

| | |
|---------------------------|------------------|
| Accuracy, | |
| -5...50 °C, (typ. / max.) | ≤ ± 0.3 / 0.5 °C |
| -5...80 °C, (typ. / max.) | ≤ ± 0.5 / 1 °C |
| Resolution | < ± 0.05°C |

Temperature range

| | |
|------------------------------|-------------|
| Operating temperature | -5...80 °C |
| Process temperature | -5...80 °C |
| Storage temperature | -10...80 °C |

Qualifications

| | Description | Level | Typical interferences |
|----------------------|-------------|----------------------------------|-----------------------|
| EN 60068-2-6 | Vibration | 10g (4...2000 Hz / ± 10 mmpp) | |
| EN 60068-2-27 | Shock | 100g (impulse duration 6 ms) | |

Physical specifications

| | |
|------------------|--|
| Materials | |
| Transducer | Stainless steel (316L / 1.4435), titanium (Gr. 2), (1) |
| Housing | Stainless steel (316L / 1.4404), titanium (Gr. 2) |
| Seals | Viton (Standard), EPDM, Kalrez |
| Cable | PUR, PTFE, PE |

(1) Hastelloy (C-276) on request

Equipment

Overview

| | |
|-------------------|----------------------|
| 10.00.0091 | Accessories overview |
|-------------------|----------------------|

Additional documents

Manual

| | Article number |
|------------|----------------|
| 10.00.0205 | DEB016 |

Operating and safety instructions

| | Article number |
|------------|----------------|
| 10.88.0092 | DMM029 |

Ordering information

| | | X. XXXX. | XXXX. | XX. | XXX |
|---------------------------------|--|----------|-------|-----|-----|
| Type | DL.WMS/GPRS/R | | | | |
| Pressure type | Gauge | 1 | | | |
| | Absolute (vacuum) | 2 | | | |
| Pressure measuring range | Any pressure measuring ranges between 0...1 mH ₂ O and 0...250 mH ₂ O available, (1) | XX | | | |
| Process connection | Closed, (Fig. 1) | 55 | | | |
| | Open, (Fig. 2) | 56 | | | |
| Electrical connection | PE cable, IP 68, (2), (3) | | 13 | | |
| | PUR cable, IP 68, (2), (4) | | 15 | | |
| | PTFE cable, IP 68, (2) | | 21 | | |
| Output signal | Stub antenna 900/1800 MHz | | 00 | | |
| | Connector for external antenna | | 01 | | |
| | Planar antenna 900/1800 MHz, attached loose | | 02 | | |
| | Planar antenna 900/1800 MHz, installed in 2" cap | | 03 | | |
| | Planar antenna 900/1800 MHz, installed in 4" cap | | 04 | | |
| Accuracy | ≤ ± 0.25 % FS | | | 1 | |
| | ≤ ± 0.1 % FS | | | 2 | |
| Temperature range | -5...50 °C compensated (allowed process temperature: -5...50 °C) | | | 4 | |
| | -5...80 °C compensated (allowed process temperature: -5...80 °C) | | | 5 | |
| Option 1 | Special oil filling: ASEOL Food (for food applications) | | | | G |
| | Special oil filling: Halocarbon (for oxygen applications), (6) | | | | H |
| Option 2 | | | | | |
| Option 3 | Ballast weight | | | | B |
| | Version titanium, (5) | | | | K |
| | Seals: Viton (standard) | | | | U |
| | Seals: EPDM | | | | S |
| | Seals: Kalrez | | | | T |
| | Lithium battery | | | | L |
| | Aging | | | | Z |

(1) mH₂O, mWS, mWC etc. available

(2) Please specify the required cable length and medium

(3) Suitable for drinking water (food approved)

(4) For operating temperature > 50°C, PE or PTFE cable must be used

(5) Only level transmitter

(6) min. Medium temperature -25 °C

Technical drawings

| | |
|--------------------------|-------------------|
| Level transmitter | Datalogger |
|--------------------------|-------------------|

Fig. 1 Closed version

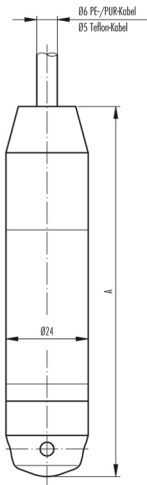
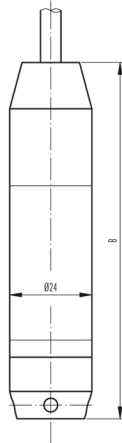
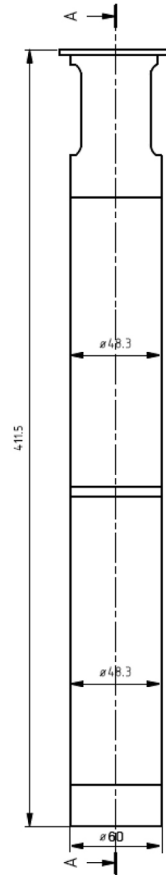


Fig. 2 Open version



| | A [mm] | B [mm] | Weight [g] |
|------------------------|--------|--------|------------|
| without ballast weight | 88 | 84 | ca. 145 |
| with ballast weight | 175 | 171 | ca. 405 |



Specifications may change without notice.

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