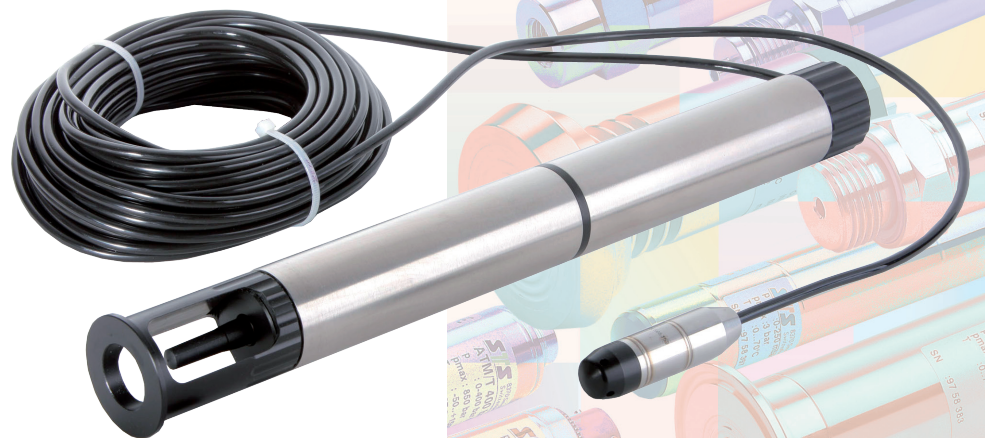


# WATERMANAGER SOLUTION

DL.WMS/GPRS/R



## Features

- Compact and robust version
- Installation in 2" / piezo tube or 4" wall-/mast installation
- Quadband GSM/GPRS engine
- Radio interface 433 MHz
- Online programming
- Sending of SMS and E-Mail
- Measuring interval adjustable from 2s to 12h
- Data memory for up to 250'000 measurement values
- Battery can be replaced on-site

## Typical applications

Transmission of level and temperature in applications:

- Wells
- Bore holes
- Groundwater
- Lakes, rivers

## Specifications DL.WMS (Datalogger)

Data transmission	
<b>Version with GSM/GPRS Engine</b>	Quadband
<b>GPRS frequency bands</b>	GPRS 850 MHz, GPRS 900 MHz, GPRS 1800 MHz, GPRS 1900 MHz
<b>Transmission power</b>	Class 4 (2 W) at GPRS, class 1 (1W) at GPRS 1800 and GPRS 1900
<b>SIM card</b>	supports 3 V SIM cards
<b>Antenna</b>	1/4 $\lambda$ stub antenna: 900/1800 MHz or 1900 MHz (Gain 0/0 dB), planar antenna: 900/1800 MHz (0/0 dB)
<b>Transmission</b>	m2m (machine to machine) protocol
Datalogger	
<b>Housing</b>	Stainless steel 1.4435 / Murytal C
<b>Communications connection</b>	FME (male connector)
<b>Interface</b>	Radio 433 MHz
<b>Power Supply</b>	2 x 1.5V alkali or 1 x 3.6V lithium / size D, (battery can be changed on-site)
<b>Temperature range</b>	-25...85°C
<b>Humidity</b>	0...100% relative H, protection class IP68 (1m/24h) with closed protection cap and connected sensor
<b>Measurands</b>	Pressure and temperature
<b>Resolution</b>	Pressure < 0.01% FS
<b>Data memory</b>	Up to 250'000 measurement values, non-volatile, data remain in memory even without battery, each measurement value is correlated with time and date
<b>Identification</b>	Each datalogger has a unique serial number, as well as a user-definable description
<b>PC requirements</b>	PC or laptop computer, processor performance min. 200 MHz, hard disk memory min. 50 MB, working memory min. 64 MB
<b>Operating system</b>	Windows 2000 / XP and Internet Explorer as of version 6.0
<b>Server automation</b>	Database administration, online data overview
<b>Database</b>	PostgreSQL, MySQL
<b>Status monitor</b>	Humidity and temperature in the housing, battery voltage, signal strength, memory allocation, latest data transfer, GPS position
<b>Application interface</b>	WISKI, HydroPro, CSV, Excel
<b>Data query of datalogger</b>	Automatic data query and administration of datalogger
<b>Access security</b>	1 level with password protection
<b>Alarm function</b>	Transmission of several alarms via SMS and E-Mail
<b>Data transmission</b>	GPRS / m2m protocol
<b>Configuration</b>	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 Internal data recording as a function threshold value
<b>Data format</b>	Data are stored in ASCII or CSV format and can be read with all common programs such as Excel, Lotus, etc.

## Qualification

	Standard	Level	Typical interferences
<b>Mechanical charges:</b>			
EN 60068-2-6	Vibration	10g (4...2000 Hz, deflection $\pm$ 10 mmpp)	
EN 60068-2-27	Shock	100g (impulse duration 6 ms)	
<b>Immunity:</b>			
EN 61000-6-2	Generic immunity		
EN 61000-4-2	Electrostatic discharge	4 kV contact, 8 kV air	
EN 61000-4-4	Fast transients (burst)	2kV	Motors, valves
EN 61000-4-5	Surge	Line - Line: 0.5kV / 42 $\Omega$ Line - Earth: 1kV / 42 $\Omega$	



## Specifications ATM.WMS (Level transmitter)

Pressure range	[bar]	0.1 ... 0.5	> 0.5 ... 2	> 2 ... 25
Overpressure		3 bar	3 x FS (min. 3 bar)	3 x FS
Burst pressure	[bar]	≥ 200	≥ 200	≥ 200
Total Error Band (TEB) <sup>1)</sup>	[± % FS]			
	(typ./max.)			
	-5...50°C	0.8/1.0	0.3/0.5	0.3/0.5
	(typ./max.)	1.3/1.5	0.75/1.0	0.75/1.0
Accuracy <sup>2)</sup>	[± % FS]	≤ 0.25 (optional ≤ 0.1)	≤ 0.25 (optional ≤ 0.1)	≤ 0.25 (optional ≤ 0.1)
Medium temperature	-5...80°C			
Storage temperature	-10...80°C			
Long term stability (typ./max.) <sup>3)</sup>		< 0.5 %FS / < 4 mbar	< 0.2 %FS / < 4 mbar	< 0.1 %FS / < 0.2 %FS
Measuring range temperature sensor				
Accuracy	(-5...50°C)		typ ± 0.3°C / max. ± 0.5°C	
	(-5...80°C)		typ ± 0.5°C / max. ± 1.0°C	
Resolution			< ± 0.05°C	
Materials				
Process connection, diaphragm, housing		Stainless steel 1.4435 or titanium (option)		
Seals		Viton (other materials see ordering information)		

<sup>1)</sup> Total Error Band incl. accuracy, temperature influences, temperature error zero and span, hysteresis and repeatability by max. signal span (2V)

<sup>2)</sup> Zero based non-conformity according to DIN16086, including hysteresis and repeatability by ambient temperature

<sup>3)</sup> The long term stability can be improved by aging (burn-in) of the sensor



## Dimensions

	Level transmitter	Datalogger
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Fig. 1 Closed version

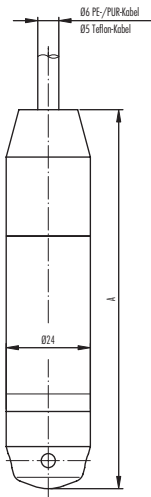
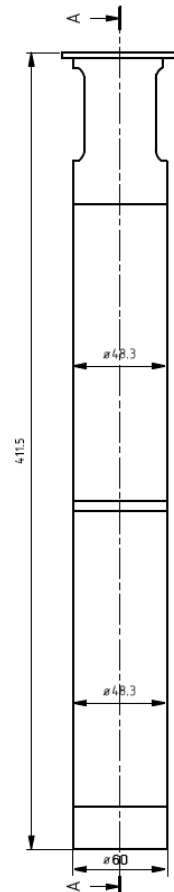
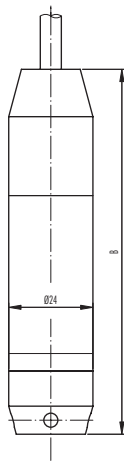


Fig. 2 Open version



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

## Ordering information

		DL.WMS/GPRS/R	X	XXXX	XXXX	XX	XXX	
<b>Type</b>	DL.WMS/GPRS/R							
<b>Pressure type</b>	Gauge		1					
	Absolute (vacuum)		2					
<b>Pressure range</b>	Any pressure ranges between 0...1mH2O and 0...250mH2O available <sup>4)</sup>		XX					
<b>Version</b>	Closed (Fig. 1)					55		
	Open (Fig. 2)					56		
<b>Electrical connection</b>	PE cable <sup>1) 3)</sup>		IP 68			13		
	PUR cable <sup>1) 2)</sup>		IP 68			15		
	Teflon cable <sup>1)</sup>		IP 68			21		
<b>Communication interface</b>	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	
<b>Accuracy</b>	≤ ± 0.25 % FS						1	
	≤ ± 0.1 % FS						2	
<b>Temperature range</b>	-5...50°C compensated (allowed medium temperature -5...50°C)						4	
	-5...80°C compensated (allowed medium temperature -5...80°C)						5	
<b>Options</b>	Version titanium <sup>5)</sup>						K	
	Ballast weight						B	
	Special oil filling in the TD:	ASEOL Food						G
		Halocarbon						H
	Seals:	Viton (standard)						U
		EPDM						S
		Kalrez						T
	Lithium battery						L	

<sup>1)</sup> Please specify the required cable length

<sup>2)</sup> For medium temperature > 50°C a PE or teflon cable must be used (max. pressure 10 bar)

<sup>3)</sup> Food approved

<sup>4)</sup> 0...0.5 mH2O on request

<sup>5)</sup> Only level transmitter

Specifications may change without notice.

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