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Watermanager solution

DL.WMS/GPRS/R/SDI-12

CUSTOMER BENEFITS

- Integrated water management solution
- Multi-parameter probe: pressure and temperature
- Various integrated communication technologies
- Inundation-resistant communication unit
- The humidity, temperature and battery lifespan of the device are constantly monitored
- Can be installed into 2'' tubes
- Web-based software solution

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	1/4 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 3.6 V lithium / size D, (battery can be changed on-site)
Operating temperature	
Datalogger	-40 ... 85°C
Modem	-30 ... 85°C
Humidity	0...100% relative H, protection class IP68 (1 m/24 h)
Measurands	Pressure and temperature
Resolution	
Pressure	0.01% FS
Temperature	0.05 °C
Data memory	Up to 500'000 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 PTM/N/SDI-12

PRESSURE MEASURING RANGE (MH2O)

	> 5 ... 20	> 20 ... 250
Overpressure	3 x FS (≥ 3 bar)	3 x FS
Burst pressure	> 200 bar	> 200 bar
Accuracy, (1), (± %FS)	≤ 0.1	≤ 0.1
Thermal error (± % FS/°C)		
-5 ... 50°C compensated	0.045	0.03
Thermal shift, (± % FS/°C)		
Zero point -5...50°C	≤ 0.03	≤ 0.015
Span -5...50°C	≤ 0.015	≤ 0.015
Long term stability, (2)	< 0.2% FS / < 4 mbar	< 0.1% FS / < 0.2% FS

(1) Zero based accuracy according to DIN-16086, incl. hysteresis and repeatability at ambient temperature
(2) 1 year (typ. / max.), the long term stability can be improved by ageing (burn-in) the sensor

TEMPERATURE MEASURING RANGE

Standard	-25...85 °C
Accuracy, (1)	≤ ± 0.3 / ≤ ± 0.5 °C

(1) -5...50 °C, typ. / max.

TEMPERATURE RANGE

Operating temperature	-5 ... 80 °C (1)
Process temperature	-5 ... 80 °C (1)
Storage temperature	-10 ... 80 °C

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

QUALIFICATIONS

	Description	Level	Typical interferences
EN 60068-2-6	Vibration	4 G (4 ... 100Hz / ± 3.2 mmpp)	
EN 60068-2-27	Shock	100 G (impulse duration 6 ms)	
EN 55022	Emission, class B	< 30 dBµV/m (0.03...1 GHz)	
EN 61000-4-2	Electrostatic discharge	4 kV contact / 8 kV air	
EN 61000-4-3	Irradiated RF	10V/m (0.08...1 GHz)	Radio sets, wireless phones
EN 61000-4-4	Transients (burst)	4 kV	Motors, valves
EN 61000-4-5	Surge	Line-Line: 0.5 kV/2 Ω, Line-Earth: 1 kV/12 Ω	Lightning
EN 61000-4-6	Conducted RF	10 V (0.15...230 MHz, 3 s)	Frequency converters

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, FEP, PE
Weight (1)	200 g

(1) Specification for a PTM/N/SDI-12, closed, cable

Equipment

OVERVIEW

10.00.0091	Accessories overview

Additional documents

MANUAL

	Article number
10.00.0487	User Manual

Ordering information

			X.	XXXX.	XXXX.	XX.	XXX
Type							
	DL.WMS/GPRS/R/SDI-12	XX					
Pressure type							
	Gauge		1				
	Absolute (vacuum)		2				
Pressure measuring range							
	500 mbar ... 25 bar			XX			
	Offset, special adjustment			99			
Process connection							
	Closed (Fig. 1)			55			
	Open (Fig. 2)			56			
Electrical connection							
	PE cable, black, IP 68 (1), (2)				13		
	PUR cable, black, IP 68 (1), (3)				15		
	FEP cable, black, IP 68 (1)				21		
Output signal							
	Stub antenna 900/1800 MHz				00		
	Connector for external antenna (4)				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							
	≤ ± 0.1 % FS					2	
Temperature range							
	-5 ... 50°C compensated (allowed process temperature: -5 ... 50°C)					4	
	-5 ... 80°C compensated (3) (allowed process temperature: -5 ... 80°C)					5	
Option 1							
	Special oil filling: Anderol Food (for food applications)						G
Option 2							
Option 3							
	Ballast weight 1.4435						B
	Version titanium (without ballast weight) (5)						K
	Seals: Viton (standard)						U
	Seals: EPDM						S
	Seals: Kalrez (Level)						T
	Lithium battery						L
	Conductivity on request						D

(1) Please specify the required cable length and medium

(2) Suitable for drinking water (food approved)

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

(4) IP 65 of the logger

(5) Only level transmitter

Technical drawings

Level transmitter

Fig. 1: Closed version

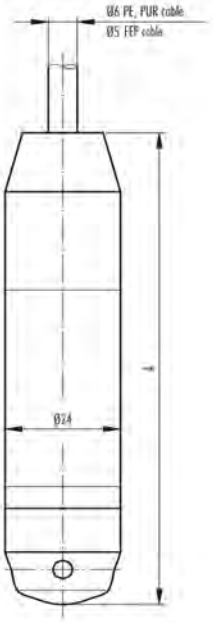
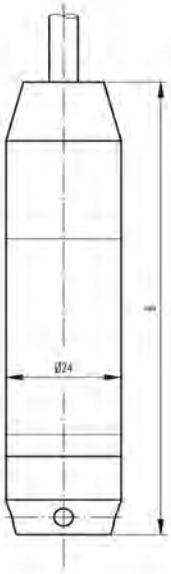


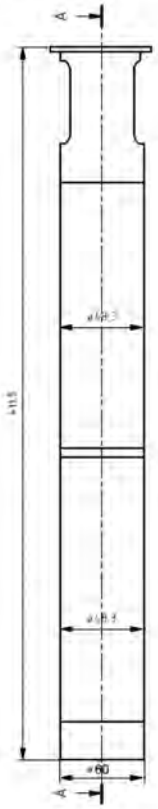
Fig. 2: Open version



Standard

A [mm]	B [mm]	Weight [g]
157	153	approx. 200

Datalogger



Specifications may change without notice.

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