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Watermanager solution

DL.WMS/GPRS/R/SDI-12

CE

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 1.5 V alkali or 1 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) with closed protection cap and connected sensor
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.WMS

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

Accuracy,	
-5 ... 50°C, (typ. / max.)	≤ ± 0.3 / 0.5 °C
-5 ... 80°C, (typ. / max.)	≤ ± 0.5 / 1 °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	4 G (4 ... 100Hz / ± 3.2 mmpp)	
EN 60068-2-27	Shock	100 G (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, FEP, PE
Weight (2)	150 g

(1) Hastelloy (C-276) on request
(2) Specification for a PTM.WMS, closed, cable

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	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 (2), (3)				13		
	PUR cable, black, IP 68 (2), (4)				15		
	FEP cable, black, 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							
	≤ ± 0.1 % FS					2	
Temperature range							
	-5 ... 50°C compensated process temperature: -5 ... 50°C)	(allowed				4	
	-5 ... 80°C compensated process temperature: -5 ... 80°C)	(allowed				5	
Option 1							
	Special oil filling: Anderol Food food applications)	(for					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

(2) Please specify the required cable length and medium

(3) Suitable for drinking water (food approved)

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

(5) Only level transmitter

Technical drawings

Level transmitter

Fig. 1: Closed version

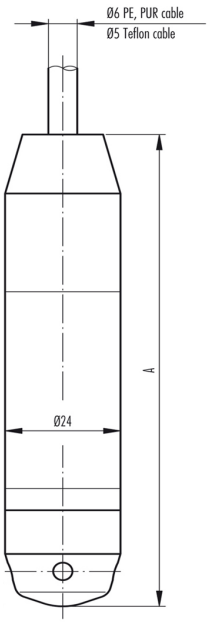
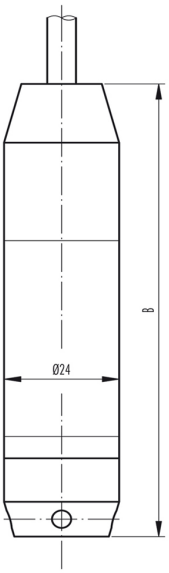


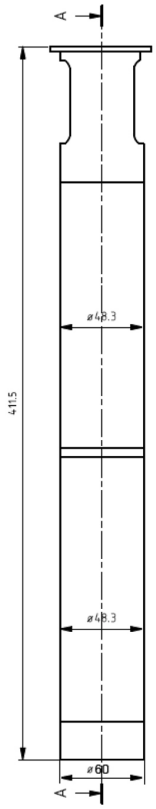
Fig. 2: Open version



Standard

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

Datalogger



Specifications may change without notice.

STS Headquarters, Switzerland:
STS Sensor Technik Sirnach AG
Rütihofstrasse 8 | 8370 Sirnach | Switzerland
sales@stssensors.com | www.stssensors.com

STS China:
STS Sensor Technology (Shanghai) Co. Ltd
Room 2603-2606 | North Building, Fortune | 108 Square
Lane 1839 | Qixin Road | Minhang District | Shanghai | China
sales@stssensors.com | www.stssensors.com.cn

STS France:
STS France
844 Route de la Caille | 74350 Allonzier la Caille | France
info-fr@stssensors.com | www.stssensors.fr

STS Germany:
STS Sensoren Transmitter Systeme GmbH
Poststrasse 7 | 71063 Sindelfingen | Germany
info-de@stssensors.com | www.stssensors.de

STS Great Britain:
STS Great Britain Ltd.
Box 3942 | Warwick | CV34 9AE | United Kingdom
contact@stssensors.com | www.stssensors.co.uk

STS Italy:
STS Italia s.r.l.
Via Lambro 36 | 20090 Opera (MI) | Italy
info-italia@stssensors.com | www.stssensors.it