Datalogger

DL/N 70

![STS logo]
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Technical Specifications

Pressure measuring range (mH20)

	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	≤ 0.1
Thermal shift, (± % FS/°C)			
Zero point -5...50°C	≤ 0.06	≤ 0.03	≤ 0.015
Span -5…50°C	≤ 0.015	≤ 0.015	≤ 0.015
Long term stability, (2)	< 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) 1 year (typ. / max.), the long term stability can be improved by ageing (burn-in) the sensor

Temperature measuring range

Standard	-5...50 °C
Lower end of range	-5 °C
Upper end of range	50 °C
Accuracy	
With conductivity	≤ ± 0.25 °C
Without conductivity	≤ ± 1 °C

Conductivity measuring range

Standard	20 µS / cm...20 mS / cm
Accuracy	
20 µS / cm...500 µS / cm	4µS / cm / +/- 2% RDG
> 500 µS / cm...20 mS / cm	+/- 2% RDG

Temperature range

Operating temperature	-5...50 °C
Process temperatur	-5...50 °C
Storage temperatur	-5...50 °C

Electrical specifications

Resolution	
Pressure	0.01% FS
Temperature	0.1 °C
Conductivity	1 µS/cm
Output	
Interface	RS485
Protocol	Modbus
Battery, (1)	Lithium, 3.6 V, AA / D
Cable length, (max.)	
1 Battery	≤ 100 m
2 Batteries	≤ 300 m

(1) Battery can be changed on-site

Functions

Data format	Data are stored in ASCII or XML format and can be read with all common programs such as Excel, Lotus, etc.
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
Data transfer	Read out data per measurement series, Read out all stored data, Read out data for a defined time-period
Real-time clock	Quartz-precision clock with date; Start-time of datalogging configurable
Identification	Each datalogger has a unique serial number, as well as a user-definable description
Configuration	Sample- and storage rate, Recording of data in a defined time-window, 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; the current pressure can be set to the actual value, Threshold value (option); Storage of the measurement data within the defined range, Density of the measuring medium (option); Set the density of the measuring medium, which is automatically calculated in as well, Data recording as a function of time or threshold value (option)

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)

	Standard	Level	Typical interferences
EN 61000-4-2	Electrostatic discharge	4 kV contact 8 kV air	
EN 61000-4-3	Irradiated RF	10 V/m (0.08...1 GHz)	Radio sets, wireless phones
EN 61000-4-4	Transients (burst)	2 kV	Motors, valves
EN 61000-4-6	Conducted RF	10 V (0.15...80 MHz)	Frequency converters

Physical specifications

Materials, (1)	
Transducer	Stainless steel (316L / 1.4435), titanium (Gr. 2), (2)
Housing level transmitter	Stainless steel (316L / 1.4404), titanium (Gr. 2), (2)
Seals	Viton (other materials see ordering information)
Battery housing	Stainless steel (316L / 1.4404), titanium (Gr. 2)
Cable	PUR, PTFE, PE

(1) Hastelloy (C-276) on request
(2) Without conductivity measurement

Equipment

Overview

10.00.0091	Accessories overview

Software

101087	PC Software V2.26

Additional documents

Manual

	Article number	Description
10.00.0205	DEB016	Operating instructions
10.00.0250	DMM021	Quick-Start

Operating and safety instructions

	Article number
10.88.0368	DMM031

Ordering information

		70	X.	XX	XX.	XX	XX.	XX	X	X	X.	XXX
Type												
	DL/N	70										
Pressure type												
	Gauge		1									
	Absolute (vacuum)		2									
Pressure measuring range (1)												
	Any pressure measuring ranges between 0...1 mH2O and 0...250 mH2O available, (1)			XX								
Model												
	Absolute type, (Fig. 1)				0							
	without battery housing, (Fig. 2c)				3							
	with battery housing, (Fig. 2)				1							
	with battery housing, 2x D batteries				5							
Cable												
	Connectable version, IP 68, (Fig. 4), (2)					4						
	PE cable, IP 68, (3), (4)					1						
	PUR cable, IP 68, (3)					0						
	PTFE cable, IP 68, (3)					2						
	PVC cabel, blue, IP 68, (3), (5)					5						
Process connection												
	Closed, (Fig. 1)						57					
	Closed, (1.4435), (Fig. 1)						58					
	Open, (Fig. 1b)						59					
	G 1/4 A						11					
	G 1/2 A						13					
Transmitter housing material												
	Stainless steel							0				
	Titanium, (6)							1				
Battery housing material												
	Stainless steel								0			
	Titanium								1			
Seal material												
	Viton (standard)									0		
	EPDM									1		
	Kalrez									2		
	NBR									3		
Temperature range												
	-5...50 °C compensated (allowed process temperature: -5...50 °C)										4	
Option												
	Temperature measurement											E
	Conductivity and temperature measurement, (6), (7)											D
	Flooding protection, (Fig. 5)											I
	Ballast weight											B

(1) mH2O, mWS, mWC etc. available

(2) Connector with required cable has to be ordered separately (KART100)

(3) Please specify the required cable length and medium

(4) Suitable for drinking water (food approved)

(5) ACS Certification

(5) Without conductivity measurement

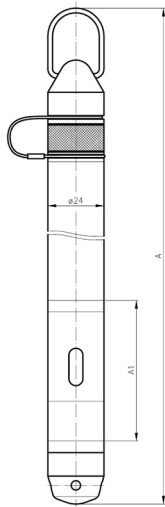(6) Pressure measuring range ≤ 100 mH2O
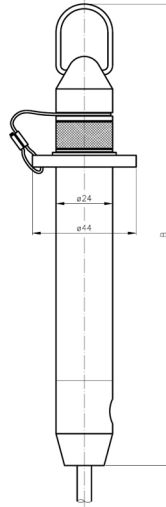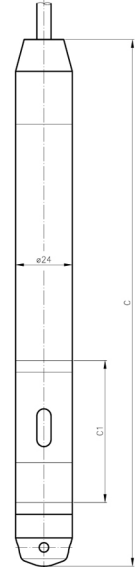
Technical drawings

Fig. 1

Fig. 2

Fig. 3

ø24

ø24
ø44

ø24

A

A1

B

C

C1

Fig.
1b/2b/3b/4b

Fig. 4

ø24

Fig. 5

ø24

O-Ring

ø24

D

C1

48

12

ø29
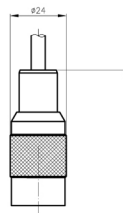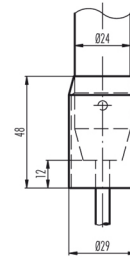
Version	Model	Fig.	Length	Weight[4] [g]	Length[3]	Weight[3] [g]	Conductivity
absolute	closed	1a	A=291	365			A1=60
	open	1b	A=287	365			A1=60
relative	1 battery[1]	2a	B=196	270			
	2 batteries[2]	2a	B=266	320			
	closed	3a	C=225	300	310	560	C1=60
	open	3b	C=221	300	306	560	C1=60
connect.	closed	4a	D=249	340			C1=60
	open	4b	D=245	340			C1=60

[1] Cable length ≤ 100m
[2] Cable length > 100m
[3] with weight extension
[4] without cable