Modbus Register
Surface Scatter 7 (SS7)

V1.01

HACH®

Be Right™

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Name	Register	Data Type	Length	Access Mode	Discrete Range	Min / Max	Description
TURB	40001	Float	2	R		0 /10000	Measured turbidity value
TURB INT	40003	Unsigned Integer	1	R		0 /10000	Integer turbidity value
TURB INT X 100	40004	Unsigned Integer	1	R		0 /65535	Integer turbidity * 100
SENSOR NAME	40005	String	6	R/W			Sensor name or location
BUBBLE REJECT	40011	Unsigned Integer	1	R/W	0 /1		Bubble reject status (0=OFF, 1=ON)
SIGNAL AVG	40012	Unsigned Integer	1	R/W	0 /1 /2 /3 /4		Signal Average (0=1, 1=6sec, 2=30sec,3=60sec,4=90sec)
DATALOG INTRVL	40013	Unsigned Integer	1	R/W	0 /1 /2 /3 /4 /5 /6 /7 /8 /9		Datalog interval (0=5sec,1=30sec,2=1min,3=2min, 4=5min,6=10min,7=15min,8=30min,9=60min, 10=4hr)
RESOLUTION	40014	Unsigned Integer	1	R/W	0 /1 /2		Maximum number of decimal places (0=xxxxx, 1=xxxx.x, 2=xxx.xx)
P/F CRITERIA	40015	Unsigned Integer	1	R/W		5 /25	Pass / Fail criteria for verification. (1 to 10 percent)
TURB UNIT	40016	Unsigned Integer	1	R/W	0 /7 /42		Turb units (0=mg/L:7=NTU,42=FTU)
SERVICE MODE	40018	Unsigned Integer	1	R/W	0 /1		Used to detemine if the instrument is in the service mode (0 = disabled, 1= enabled)
SERIAL NUMBER	40021	String	6	R			Instrument serial number
CODE VERSION	40027	Float	2	R		0 /99999	Software Version
DD Firmware	40029	Unsigned Integer	1	R		0 /99	Device driver firmware version
DD CONTENT	40030	Unsigned Integer	1	R		0 /99	Device driver content version
HW VERSION	40031	Unsigned Integer	1	R		0 /3	Hardware version of pc board
TEMP	40032	Float	2	R			Temperature measurement in Celsius
DARK	40034	Unsigned Integer	2	R		0 /16800000	Dark turbidity A/D counts.
RAW TURB	40036	Float	2	R		0 /20000	Turbidity value with dark offset and gain applied.
TURB COUNTS	40038	Unsigned Integer	2	R		0 /16777215	turbidity A/D counts
TEMP MAX	40040	Float	2	R		0 /100.0	Maximum Temperature
TEMP MIN	40042	Float	2	R		0 /100.0	Minimum Temperature
LAMP V	40044	Float	2	R		0 /7.0	Lamp voltage
LAMP CURR	40046	Float	2	R		0 /5.0	Lamp Current (amps)
Plus 5V	40048	Float	2	R		0 /10	Plus five volt measurement
INPUT V	40050	Float	2	R		0 /30	Input voltage (~12V)
VREF	40052	Float	2	R		0 /5	Voltage reference measurement (2.5V)
CAL GAIN	40067	Float	2	R		0.01 /999.99	Calibration gain factor - used to convert A/D counts to turbidity
INITIALS	40083	String	2	R			Initials used for the latest calibration
LAST CAL DATE	40085	Time2	2	R			Time of the latest calibration
CAL VALUE	40087	Float	2	R		0 /10000	The standard value used for the latest calibration

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ALL Sensors and Analyzer: Classified ERROR Word - Register 49930

Table 2 Error register

Bit	Error	Description
0	Calibration error	Faulty calibration detected
1	Electronic settings error	Faulty electronic calibration/settings
2	Cleaning error	Error in cleaning cycle detected
3	Measuring module error	Error in measuring module detected
4	System initialization	Inconsistent settings detected, reset to factory settings
5	Hardware error	Faulty hardware detected
6	Internal communication error	Internal communication error detected
7	Humidity error	Excessive humidity detected
8	Excessive temperature	Excessive temperature detected
9		
10	Sample feed warning	Error in sample feed detected
11	Questionable calibration warning	Accuracy of previous calibration inadequate
12	Questionable measurement warning	Accuracy of previous measurement inadequate/out of range
13	Safety warning	Safety equipment error detected
14	Reagent warning	Reagent warning, e.g. fill level < min detected
15	Service request warning	Service request detected

ALL Sensors and Analyzer: Classified STATUS Word - Register 49931

Table 3 Status register

Bit	Status 1	Description
0	Calibration activated	Calibration in progress, measurement value not up to date
1	Cleaning activated	Cleaning in progress, measurement value not up to date
2	Service mode activated	Device in "Service" mode, measurement value not up to date
3	General error message	General error detected, refer to error text for details
4	Measurement value channel 0, poor quality	Measurement accuracy is not within specified limits
5	Measurement value channel 0, range short-fall	Measurement value falls short of the specified range
6	Measurement value channel 0, range exceeded	Measurement value exceeds the specified range
7	Measurement value channel 1, poor quality	Measurement accuracy is not within specified limits
8	Measurement value channel 1, range short-fall	Measurement value falls short of the specified range
9	Measurement value channel 1, range exceeded	Measurement value exceeds the specified range
10	Measurement value channel 2, poor quality	Measurement accuracy is not within specified limits
11	Measurement value channel 2, range short-fall	Measurement value falls short of the specified range
12	Measurement value channel 2, range exceeded	Measurement value exceeds the specified range
13	Measurement value channel 3, poor quality	Measurement accuracy is not within specified limits
14	Measurement value channel 3, range short-fall	Measurement value falls short of the specified range
15	Measurement value channel 3, range exceeded	Measurement value exceeds the specified range