Modbus Register
Nitratax plus sc

V3.18

HACH®

Be Right™

Nitratax plus sc V3.18

Name	Register	Data Type	Length	Access Mode	Discrete Range	Min / Max	Description
measurement	40001	Float	2	R		0 /500	displayed measurement value
unit	40003	Unsigned Integer	1	R/W	U0 /2		unit : mg/l = 0, ppm = 2
parameter	40004	Unsigned Integer	1	R/W	P3 /2		NOx-N = 3, NO3 = 2
measure_interval	40005	Unsigned Integer	1	R/W	15 /20 /30 /60 /120 /180 /240 /300 /360 /600 /720 /900 /1200 /1800		intervall in seconds
correction	40006	Float	2	R/W		0,8 /1,2	correction, 0.8 ... 1.2
offset	40008	Float	2	R/W		-250 /250	offfset in mE
integration	40010	Unsigned Integer	1	R/W		1 /12	not used
cleaning_interval	40011	Unsigned Integer	1	R/W	4096 /4098 /1 /2 /3 /4 /6 /10 /12 /15 /20 /30 /60 /120 /180 /240 /360 /720 /4097		cleaning interval in min, 4096 = 1/M : 4097 = 10:00
wiper_mode	40012	Unsigned Integer	1	R/W	2 /0 /1		mode
wiper_state	40013	Unsigned Integer	1	R/W	4 /2 /32 /16 /1 /8 /0		state
integration_time	40014	Unsigned Integer	1	R/W		1 /12	integration time in meas. intervals
driver structure	40015	Unsigned Integer	1	R		0 /255	version driver structure
driver firmware	40016	Unsigned Integer	1	R		0 /255	version driver firmware
driver content	40017	Unsigned Integer	1	R		0 /255	version driver content
location	40018	String	5	R/W			location name
path length	40023	Float	2	R		0 /1000	path width
wiper_profile	40025	Integer	2	R		-2147483648 /2147483647	remaining wipes til replace requ.
motor cycles	40027	Integer	2	R		-2147483648 /2147483647	number of motor cycles
flashs	40029	Unsigned Integer	2	R		0 /2140000000	number of flashs
seals_counter	40031	Integer	2	R		-2147483648 /2147483647	remaining days til replace required
service_counter	40033	Integer	2	R		-2147483648 /2147483647	remaining days til service required
operating_hours	40035	Unsigned Integer	2	R		0 /2140000000	number of operating hours
shaft seals	40037	Integer	2	R		-2147483648 /2147483647	remaining axis cycles til replacing
wiper start	40039	Unsigned Integer	2	R/W		0 /1000000	wiper start value
start seals	40041	Unsigned Integer	2	R/W		0 /1000	start value seal counter
start service	40043	Unsigned Integer	2	R/W		0 /1000	start value service counter
start axis	40045	Unsigned Integer	2	R/W		0 /1000000	start value shaft seal counter
measurement	40047	Float	2	R/W		0 /500	uncorrected measurement value for calibration
meas_single_value	40049	Float	2	R		0 /500	measurement single value (no average)

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dext	40051	Float	2	R		-1000 /10000	delta extinction
EM	40053	Float	2	R		-1 /10	meas. extinction
ER	40055	Float	2	R		-1 /10	ref. extinction
M	40057	Float	2	R		0 /1024	m - channel
R	40059	Float	2	R		0 /1024	r - channel
intensity_meas	40061	Float	2	R		0 /1000	m - intensity
intensity_ref	40063	Float	2	R		0 /1000	r - intensity
humidity	40065	Float	2	R		0 /101	humidity
concentration blank	40067	Float	2	R		0 /10000	concentration without offset and correction
factory calib date	40069	Time2	2	R			date of factory calibration
user cal date	40071	Time2	2	R			date of user calibration
max_meas	40073	Float	2	R/W		0 /400	maximum measurement value
cal_L1	40075	Float	2	R		0 /10000	calibr. point 1
cal_L2	40077	Float	2	R		0 /10000	calibr. point 2
cal_L3	40079	Float	2	R		0 /10000	calibr. point 3
cal_meas	40081	Float	2	R		0 /1024	m - calibration
cal_ref	40083	Float	2	R		0 /1024	r - calibration
cal_intensity_meas	40085	Float	2	R		0 /10000	intensity m - calibration
cal_intensity_ref	40087	Float	2	R		0 /10000	intensity r - calibration
cal_ext	40089	Float	2	R		0 /10000	extinction - calibration
process	40091	Unsigned Integer	1	R/W		0 /65535	process control
menu_state	40092	Unsigned Integer	1	R/W		0 /65535	actual menu after process
gain_meas	40093	Unsigned Integer	1	R		0 /255	gain meas. channel
gain_ref	40094	Unsigned Integer	1	R		0 /30000	gain reference channel
level_a	40095	Unsigned Integer	1	R		0 /1023	light barrier level pos A
level_b	40096	Unsigned Integer	1	R		0 /1023	light barrier level pos B
level_out	40097	Unsigned Integer	1	R		0 /1023	light barrier level pos OUT
version	40098	String	4	R			software version
serial_no	40102	Unsigned Integer	2	R/W		0 /10000000	serial number
output_cfg	40104	Unsigned Integer	1	R/W	2 /1 /3 /0		output during calibraion
user_cal_int	40105	Unsigned Integer	1	R/W		0 /30	user calibration interval
motor_current	40106	Unsigned Integer	1	R		0 /20000	motor current
resp_time_value	40107	Unsigned Integer	1	R		0 /1000	response time value
resp_time_unit	40108	Unsigned Integer	1	R	U16 /15		response time unit for value in resp time value, s = 15, min = 16
flash_per_filter	40109	Unsigned Integer	2	R		0 /1000000000	flashs per filter
cp_m1	40111	Float	2	R/W		0 /1000	capacitor meas. 1 in nF
cap_m2	40113	Float	2	R/W		0 /1000	capacitor meas. 2 in nF
cap_r1	40115	Float	2	R/W		0 /1000	capacitor ref. 1 in nF
cap_r2	40117	Float	2	R/W		0 /1000	capacitor ref. 2 in nF

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Name	Register	Data Type	Length	Access Mode	Discrete Range	Min / Max	Description
lambda_m	40119	Float	2	R/W		0 /1000	wavelength meas channel
lambda_r	40121	Float	2	R/W		0 /1000	wavelength ref. channel
trans_m	40123	Float	2	R/W		0 /1	transmission meas channel
trans_r	40125	Float	2	R/W		0 /1	trnasmission ref. channel
prod_date	40128	Time2	2	R			production date
sensor_type	40130	String	8	R/W			sensor type
filter_set	40138	String	3	R/W			filter set no.
user_cal_counter	40141	Integer	1	R		-32768 /32767	next user calib. (in xx days requ.)
enable_pos_out	40142	Unsigned Integer	1	R/W	0 /1		Wiper Pos Out enabled, 0 = no, 1 = yes
shaftseals_err_limit	40143	Unsigned Integer	2	R/W		0 /100000	error limit for shaft seals
dext_limit	40145	Integer	1	R/W		0 /500	threshold for error 'dExt<0'
offset	40146	Float	2	R/W		?	offfset in mg/l
CalCurveType	40148	String	2	R			Type of calibration curve
CAL COEFF 1	40150	Float	2	R			max Extinktion
CAL COEFF 2	40152	Float	2	R			deflection
CAL COEFF 3	40154	Float	2	R			100% correction

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