Modbus Register
sc200 US Flow Module

V1.02

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Name	Register	Data Type	Length	Access Mode	Discrete Range	Min / Max	Description
FLOW	40001	Float	2	R		0 /99999.99	The flow value
VOLUME	40003	Float	2	R		0 /999999999	The volume value
RANGE	40005	Float	2	R		?	The range value
DEPTH	40007	Float	2	R		?	The measured depth reading
FLOW UNITS	40009	Unsigned Integer	1	R		0 /65535	The units of flow rate
VOLUME UNITS	40010	Unsigned Integer	1	R		0 /65535	The units of volume
MEAS UNITS	40011	Unsigned Integer	1	R		0 /65535	The units of measurement
RESUME READING	40012	Unsigned Integer	1	R/W	0 /1 /2 /3 /4 /5 /6 /7 /8 /9 /10		The resume reading after calibration:MANUAL=0, 1_MIN=1, 2_MINS=2, 3_MINS=3, 4_MINS=4, 5_MINS=5, 6_MINS=6, 7_MINS=7,8_MINS=8, 9_MINS=9, 10_MINS=10
FORMAT-DIS	40013	Unsigned Integer	2	R		0 /2000000000	The display format of flow
FORMAT-DIS	40015	Unsigned Integer	2	R		0 /2000000000	The measurement format
MIN DEPTH	40017	Float	2	R		0 /99999.999	The min. user depth
MAX DEPTH	40019	Float	2	R/W		?	The max. user depth
MEAS UNITS	40021	Unsigned Integer	1	R/W	U12 /13 /80 /43		The measurement units:mm=12,meter=13,inches=80,feet=43
TEMP	40022	Float	2	R		0 /392.0	The temperature reading
TEMP UNITS	40024	Unsigned Integer	1	R/W	U25 /26		The units of temperature:C=25, F=26
TEMPERATURE	40025	Float	2	R		0 /99999.999	The min. measured temperature
TEMPERATURE A	40027	Float	2	R		0 /99999.999	The max. measured temperature
RANGE	40029	Float	2	R/W		?	The range value in cal mode
NEW SENSOR ?	40031	Unsigned Integer	1	R/W	1 /0		The new sensor selection-yes=1 or no=0
ENTER OP ID	40032	String	2	R/W			The OP ID
DEPTH	40034	Float	2	R/W		?	The depth value in cal mode
FLOW UNITS	40036	Unsigned Integer	1	R/W	71 /72 /73 /124 /143 /74 /107 /93 /108 /68 /67 /69 /94 /144 /75 /104 /105 /147 /146 /145 /148 /125 /151 /150 /149		The flow units setting:LITERS_SEC = 71, LITERS_MIN=72, LITERS_HOUR=73, LITERS_DAY = 124,MIL_LITERS_DAY = 143, CUBIC_M_SEC = 74, CUBIC_M_MIN = 107, CUBIC_M_HOUR = 93,CUBIC_M_DAY = 108, US_GAL_SEC = 68, US_GAL_MIN = 67, US_GAL_HOUR = 69,US_GAL_DAY = 94, MIL_US_GAL_DAY = 144, CUBIC_FT_SEC = 75, CUBIC_FT_MIN = 104,CUBIC_FT_HOUR=105, UK_GAL_SEC = 147, UK_GAL_MIN = 146, UK_GAL_HOUR = 145,UK_MIL_GAL_DAY = 148, ACRE_FEET_HOUR = 125, BARRELS_OF_OIL_SEC = 151,BARRELS_OF_OIL_MIN = 150, BARRELS_OF_OIL_HOUR = 149
FLOW LOG INTERVAL	40037	Unsigned Integer	1	R/W	0 /1 /2 /3 /4 /5 /6 /7 /8		The data log interval for flow:5_sec=0, 30_sec=1, 1_min=2, 2_min=3, 5_min=4, 10_min=5, 15_min=6, 30_min=7, 60_min=8
VOLUME LOG INTERVAL	40038	Unsigned Integer	1	R/W	0 /1 /2 /3 /4 /5 /6 /7 /8		The data log interval for volume:5_sec=0, 30_sec=1, 1_min=2, 2_min=3, 5_min=4, 10_min=5, 15_min=6, 30_min=7, 60_min=8
MULTIPLIER	40039	Unsigned Integer	1	R/W	P52 /53 /54 /55 /56		The multiplier for flow:X1=52, X10=53,,X100=54, X1000=55, X10000=56
SET RESOLUTION	40040	Unsigned Integer	1	R/W	0 /1 /2		The display resolution for flow:XXXX=0, XXX.X=1, XX.XX=2

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VOLUME UNITS	40041	Unsigned Integer	1	R/W	91 /138 /90 /139 /142 /98 /97 /140 /96 /141		The volume units:LITERS = 91, MILLION_LITERS = 138, US_GALLONS = 90, MILLION_US_GAL = 139,UK_GALLONS = 142, CUBIC_METERS = 98, CUBIC_FEET = 97, CUBIC_INCHES = 140,ACRE_FEET = 96, BARRELS_OF_OIL = 141
ECHO TIMEOUT	40042	Unsigned Integer	1	R/W		0 /300	The echo timeout setting
EXCESS TIMEOUT	40043	Unsigned Integer	1	R/W		0 /300	The excess timeout setting
EXCESS LEVEL	40044	Float	2	R/W		?	The excess level setting
SENSOR TIMEOUT	40046	Unsigned Integer	1	R/W		0 /300	The sensor timeout setting
FILTER	40047	Integer	1	R/W		0 /60	The filter setting
GAUGE TYPE	40048	Unsigned Integer	1	R/W	0 /1 /2 /3 /4 /5 /6 /7 /8 /9 /10 /11 /12		The gauge type:V_NOTCH_WEIR=0, RECTANGULAR_WEIR=1, RECTANGULAR_FLUME=2, ROUND_BOT_FLUME=3,CIPOLLETTI_WEIR=4, NEYRPIC_FLUME=5, PARSHALL_FLUME=6, P_BOWLUS_FLUME=7, KHAFAGI_FLUME=8,L_LAGCO_FLUME=9, H_TYPE_FLUME=10, TRAPEZOIDIAL_FLUME=11, USER_DEFINED=12
CIPOLLETTI	40049	Unsigned Integer	1	R/W	0 /1 /2 /3 /4 /5 /6 /7 /8 /9		The cipolletti weir type:1_FT=0, 1_FT_6_IN=1, 2_FT=2, 2_FT_6IN=3, 3_FT=4, 4_FT=5, 5_FT=6, 6_FT=7,8_FT=8, 10_FT=9
C MAX DEPTH	40050	Float	2	R/W		?	The max. depth for cipolletti weir type
CHANNEL WIDTH	40052	Float	2	R/W		?	The channle width for rectangular weir
CREST WIDTH	40054	Float	2	R/W		?	The crest width for rectangular weir
CREST HEIGHT	40056	Float	2	R/W		?	The crest hight for rectangular weir
R MAX DEPTH	40058	Float	2	R/W		?	The max. depth for rectangular weir
TANK WIDTH	40060	Float	2	R/W		?	The V notch tank width
V NOTCH	40062	Float	2	R/W		?	The crest hight for V notch weir
NOTCH ANGLE	40064	Float	2	R/W		0 /100.0	The V notch angle
V MAX DEPTH	40066	Float	2	R/W		?	The V notch max. depth
H TYPE	40068	Unsigned Integer	1	R/W	0 /1 /2 /3 /4 /5 /6 /7 /8 /9 /10 /11 /12		The H type flume:0_4_FT__HS=0, 0_6_FT__HS=1, 0_8_FT__HS=2, 1_0_FT__HS=3, 0_5_FT__H=4, 0_75_FT__H=5,1_0_FT__H=6, 1_5_FT__H=7, 2_0_FT__H=8, 2_5_FT__H=9, 3_0_FT__H=10, 4_5_FT__H=11,4_0_FT__HL=12
H MAX DEPTH	40069	Float	2	R/W		?	The max. depth for H type flume
THROAT WIDTH1	40071	Float	2	R/W		?	The throat width for Khafagi flume
K MAX DEPTH	40073	Float	2	R/W		?	The max. depth for Khafagi flume
L TYPE	40075	Unsigned Integer	1	R/W	0 /1 /2 /3 /4 /5 /6 /7 /8 /9		Leopold-Lagco Flume:4_IN=0, 6_IN=1, 8_IN=2, 10_IN=3, 12_IN=4, 15_IN=5, 18_IN=6, 21_IN=7, 24_IN=8, 30_IN=9
L MAX DEPTH	40076	Float	2	R/W		?	The max. depth for Leopold-Lagco Flume
NEYRPIC TYPE	40078	Unsigned Integer	1	R/W	0 /1 /2 /3 /4 /5 /6 /7 /8 /9 /10 /11 /12 /13 /14 /15 /16 /17 /18 /19 /20 /21 /22 /23 /24 /25 /26 /27 /28 /29 /30 /31 /32		The Neyrpic flume:1234A=0, 1236A=1, 1236B=2, 1236C=3, 1236D=4, 1236E=5, 1236G=6, 1245A=7, 1245B=8,1245C=9, 1245D=10, 1253A=11, 1253AX=12, 1253AY=13, 1253AZ=14, 1253B=15, 1253C=16, 1253D=17,1253E=18, 1254A=19, 1254B=20, 1254C=21, 1254D=22, 1254E=23, 1254F=24, 1241B_C=25, 1241E_F=26,1241G_H=27, 1242B3=28, 1242C3=29, 1242D3=30
NEY F MAX DEPTH	40079	Float	2	R/W		?	The max. depth for Neyrpic flume
PALMER BOWLUS	40081	Unsigned Integer	1	R/W	0 /1 /2 /3 /4 /5 /6 /7 /8 /9 /10 /11 /12		Palmer-Bowlus flume:4_IN=0, 6_IN=1, 8_IN=2, 10_IN=3, 12_IN=4, 15_IN=5, 18_IN=6, 21_IN=7, 24_IN=8,27_IN=9, 30_IN=10, 36_IN=11, 42_IN=12
PAL MAX DEPTH	40082	Float	2	R/W		?	The max. depth for Palmer-Bowlus flume

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PARSHALL FLUME	40084	Unsigned Integer	1	R/W	0 /1 /2 /3 /4 /5 /6 /7 /8 /9 /10 /11 /12 /13 /14 /15 /16 /17 /18 /19 /20 /21		Parshall flume:1_IN=0, 2_IN=1, 3_IN=2, 6_IN=3, 9_IN=4, 2_FT=5, 3_FT=6, 4_FT=7, 5_FT=8,6_FT=9, 7_FT=10, 8_FT=11, 10_FT=12, 12_FT=13, 15_FT=14, 20_FT=15, 25_FT=16, 30_FT=17,40_FT=18, 50_FT=19
PAR MAX DEPTH	40085	Float	2	R/W		?	The max. depth for Parshall flume
RBF WIDTH	40087	Float	2	R/W		?	The throat width for round bot flume
RBF C WIDTH	40089	Float	2	R/W		?	The channel width for round bot flume
RBF T LEN	40091	Float	2	R/W		?	The throat length for round bot flume
RBF RNESS	40093	Float	2	R/W		0 /5.00	the roughness for round bot flume
RBF TEMP	40095	Float	2	R/W		?	The water temperature for round bot flume
RBF HEIGHT	40097	Float	2	R/W		?	The hump height for round bot flume
RBF OFFSET	40099	Float	2	R/W		0 /18.00	The datum offset for round bot flume
RBF MAX DEPTH	40101	Float	2	R/W		?	The max. depth for round bot flume
RECT T WIDTH	40103	Float	2	R/W		?	The throat width for rectangular flume
RECT WIDTH	40105	Float	2	R/W		?	The channel width for rectangular flume
RECT T LEN	40107	Float	2	R/W		?	The throat length for rectangular flume
RECT RNESS	40109	Float	2	R/W		0 /5.00	The roughness for rectangular flume
RECT WATER T	40111	Float	2	R/W		?	The water temperature for rectangular flume
RECT HEIGHT	40113	Float	2	R/W		?	The hump height for rectangular flume
RECT OFFSET	40115	Float	2	R/W		0 /18.00	The datum offset for rectangular flume
RECT MAX DEPTH	40117	Float	2	R/W		?	The max. depth for rectangular flume
TRAPEZOIDIAL TYPE	40119	Unsigned Integer	1	R/W	0 /1 /2 /3		Trapezoidal flume:LARGE_60_DEG=0, EXTRA_LARGE_60_DEG_=1, 2IN45DEG__WSC=3, 12IN45DEG__SRCRC=4
TRAP MAX DEPTH	40120	Float	2	R/W		?	The max. depth for Trapezoidal flume
NO OF PT	40122	Integer	1	R/W		3 /99	The number of points for user-defined gauge type
USER MAX DEPTH	40123	Float	2	R/W		?	The depth value for user-defined gauge type
USER DEPTH PT	40125	Unsigned Integer	1	R/W		1 /99	The current entry point for user-defined depth value:POINT_1, POINT_2, POINT_3, POINT_4, POINT_5, POINT_6, POINT_7, POINT_8,POINT_9, POINT_10, POINT_11, POINT_12, POINT_13, POINT_14, POINT_15, POINT_16,POINT_17, POINT_18, POINT_19, POINT_20, POINT_21, POINT_22
CONFIGURE USER FLOW	40126	Float	2	R/W		0 /99999.999	The flow value for user-defined gauge type
CFG POINT	40128	Unsigned Integer	1	R/W		1 /99	The current entry point for user-defined flow value:POINT_1, POINT_2, POINT_3, POINT_4, POINT_5, POINT_6, POINT_7, POINT_8,POINT_9, POINT_10, POINT_11, POINT_12, POINT_13, POINT_14, POINT_15, POINT_16,POINT_17, POINT_18, POINT_19, POINT_20, POINT_21, POINT_22, POINT_23,POINT_24, POINT_25, POINT_26, POINT_27, POINT_28, POINT_29, POINT_30
TOTALIZER MODE	40129	Unsigned Integer	1	R/W	1 /0		The totalizer reset mode
S/W VERS	40130	Float	2	R		0 /99.99	The application version
FUNCTION CODE	40132	Unsigned Integer	1	R/W		0 /65535	The function code
NEXT STATE	40133	Unsigned Integer	1	R		0 /65535	The next state
SENSOR NAME	40134	String	8	R/W			The sensor name
S/N	40142	String	6	R			The module serial number
SERIAL NUMBER	40148	String	8	R/W			The sensor serial number

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Name	Register	Data Type	Length	Access Mode	Discrete Range	Min / Max	Description
DRIVER VERS	40156	Unsigned Integer	1	R		0 /65535	The device driver version
HTRY UNITS	40157	Unsigned Integer	1	R		0 /65535	The measurement units for cal history
CAL DAYS	40158	Unsigned Integer	1	R		0 /32000	The days since last calibration
SENSOR DAYS	40159	Unsigned Integer	1	R/W		0 /9999	The sensor opration days
HISTORY	40160	Unsigned Integer	2	R		0 /2000000000	The measurement format for cal history
DATE	40162	Time2	2	R			The date for cal history
CAL HISTORY	40164	Unsigned Integer	1	R	0 /1 /2		The cal type for cal history:DEPTH_1_PT=0, DEPTH_2_PT=1, DEFAULT =2
STATUS	40165	Unsigned Integer	1	R	0 /1 /2 /3		The cal status for cal history:PASS= 0, FAIL=1
SLOPE	40166	Float	2	R		0 /999.9999	The slope for cal history
DEPTH	40168	Float	2	R		0 /9999999.99	The depth value in cal history
OLD DEPTH	40170	Float	2	R			The old depth value
OLD SLOPE	40172	Float	2	R			The old slope value
USER MAX DEPTH	40174	Float	2	R		0 /99999.999	The max.depth value for user-defined gauge type
CAL REMINDER	40176	Unsigned Integer	1	R/W	0 /1 /2 /3 /4 /5 /6 /7 /8 /9		The cal reminder option:OFF=0, 1_DAY=1, 60_DAYS = 7, 30_DAYS = 30, 60_DAYS = 60, 90_DAYS = 90,6_MONTHS = 180, 9_MONTHS = 270, 1_YEAR = 365, 2_YEARS = 730
OP ID ON CAL	40177	Unsigned Integer	1	R/W	0 /1		The OP ID enable option
LOG PARAM	40178	String	8	R			The event log parameter
LOG FLOAT	40186	Float	2	R			The float data type for event log
LOG TEXT	40188	String	8	R			The text data type for event log
LOG INT	40196	Integer	1	R		-32768 /32767	The integer data type for event log
CAL FAIL	40197	Unsigned Integer	1	R	0 /2 /1 /3		The cal failure message
DATE1	40198	Time2	2	R			The date in the first line of cal history
DATE2	40200	Time2	2	R			The date in the second line of cal history
DATE3	40202	Time2	2	R			The date in the 3rd line of cal history
DATE4	40204	Time2	2	R			The date in the 4th line of cal history
DATE5	40206	Time2	2	R			The date in the 5th line of cal history
DATE6	40208	Time2	2	R			The date in the 6th line of cal history
TIME1	40210	Time2	2	R			The time in the first line of cal history
TIME2	40212	Time2	2	R			The time in the second line of cal history
TIME3	40214	Time2	2	R			The time in the 3rd line of cal history
TIME4	40216	Time2	2	R			The time in the 4th line of cal history
TIME5	40218	Time2	2	R			The time in the 5th line of cal history
TIME6	40220	Time2	2	R			The time in the 6th line of cal history
PAGE NO:	40222	Unsigned Integer	1	R		0 /65535	The page number for cal history display

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Name	Register	Data Type	Length	Access Mode	Discrete Range	Min / Max	Description
HIDDEN LINE	40223	Unsigned Integer	1	R		0 /65535	The hidden tag for cal history display
HIGHLIGHT LINE	40224	Unsigned Integer	1	R		0 /65535	The highlight tag for cal history display
BOOT LOADER VERS	40225	Float	2	R		0 /99.99	The boot code version
TIME	40227	Time2	2	R			The cal history time
ECHO TIME	40229	Float	2	R		0 /99.99	The measured echo time
FlowMeas Int US	40231	Unsigned Integer	2	R		0 /99999999	The integer value of flow measurement in liter per second
VolumeMeas Int US	40233	Unsigned Integer	2	R		0 /999999999	The integer value of volume measurement in liters
Range Int US	40235	Unsigned Integer	1	R		0 /9999	The integer value of range measurement in meters
Depth Int US	40236	Unsigned Integer	1	R		0 /9999	The integer value of depth measurement in meters
Temperature Int US	40237	Integer	1	R		-40 /200	The integer value of temperature measurement in meters
CalLeave US	40238	Unsigned Integer	1	R/W	0 /1 /2		
HisRange US	40239	Float	2	R		0 /9999999.99	The range value in cal history
DD CONTENT	40241	Unsigned Integer	1	R		0 /9999	The device driver content version
UserTblPt US	40242	Unsigned Integer	1	R/W		1 /99	
UserParamPt US	40243	String	3	R			The user defined parameter for point selection
PulsedVolumeMeas US	40246	Float	2	R		0 /99999999	The pulsed volume for relay output
PulsedVolumeSet US	40248	Float	2	R/W		0 /99999999	The pulsed volume for relay output
PulseSuppression US	40250	Unsigned Integer	1	R/W	0 /1		The pulse suppression for height/flow
PulseOutWidth	40251	Unsigned Integer	1	R/W		0 /9999	The pulse out width for pulsed volume

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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