Modbus Register
sc1000 mA Output External Module

V2.20

HACH®

Be Right™

sc1000 mA Output External Module V2.20

Name	Register	Data Type	Length	Access Mode	Discrete Range	Min / Max	Description
11 CURRENT	40003	Float	2	R	mA OUTPUT1 /LINEAR CONTROL		mA
16 CURRENT	40003	Float	2	R	mA OUTPUT1 /PID CONTROL		mA
11 CURRENT	40005	Float	2	R	mA OUTPUT2 /LINEAR CONTROL		mA
16 CURRENT	40005	Float	2	R	mA OUTPUT2 /PID CONTROL		mA
02 SET FUNCTION	40007	Unsigned Integer	1	R/W	mA OUTPUT1 /LINEAR CONTROL		0: LINEAR CONTROL 1: PID CONTROL
02 SET FUNCTION	40007	Unsigned Integer	1	R/W	mA OUTPUT1 /PID CONTROL		0: LINEAR CONTROL 1: PID CONTROL
02 SET FUNCTION	40008	Unsigned Integer	1	R/W	mA OUTPUT2 /LINEAR CONTROL		0: LINEAR CONTROL 1: PID CONTROL
02 SET FUNCTION	40008	Unsigned Integer	1	R/W	mA OUTPUT2 /PID CONTROL		0: LINEAR CONTROL 1: PID CONTROL
07 SET MODE	40009	Unsigned Integer	1	R/W	mA OUTPUT1 /PID CONTROL		0: DIRECT 1: REVERSE
07 SET MODE	40010	Unsigned Integer	1	R/W	mA OUTPUT2 /PID CONTROL		0: DIRECT 1: REVERSE
10 SET SETPOINT	40011	Float	2	R/W	mA OUTPUT1 /PID CONTROL		Output current when SET MODE is set to MANUAL
10 SET SETPOINT	40013	Float	2	R/W	mA OUTPUT2 /PID CONTROL		Output current when SET MODE is set to MANUAL
12 PROPORTIONAL	40015	Float	2	R/W	mA OUTPUT1 /PID CONTROL		Just a Factor
12 PROPORTIONAL	40017	Float	2	R/W	mA OUTPUT2 /PID CONTROL		Just a Factor
13 INTEGRAL	40019	Float	2	R/W	mA OUTPUT1 /PID CONTROL		Minutes
13 INTEGRAL	40021	Float	2	R/W	mA OUTPUT2 /PID CONTROL		Minutes
14 DERIVATIVE	40023	Float	2	R/W	mA OUTPUT1 /PID CONTROL		Minutes
14 DERIVATIVE	40025	Float	2	R/W	mA OUTPUT2 /PID CONTROL		Minutes
15 SNAP SHOT	40027	Float	2	R	mA OUTPUT1 /PID CONTROL		Unit of configured source/parameter
15 SNAP SHOT	40029	Float	2	R	mA OUTPUT2 /PID CONTROL		Unit of configured source/parameter
03 SET TRANSFER	40031	Float	2	R/W	mA OUTPUT1 /LINEAR CONTROL		mA

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Name	Register	Data Type	Length	Access Mode	Discrete Range	Min / Max	Description
03 SET TRANSFER	40031	Float	2	R/W	mA OUTPUT1 /PID CONTROL		mA
03 SET TRANSFER	40033	Float	2	R/W	mA OUTPUT2 /LINEAR CONTROL		mA
03 SET TRANSFER	40033	Float	2	R/W	mA OUTPUT2 /PID CONTROL		mA
04 SET FILTER	40035	Unsigned Integer	1	R/W	mA OUTPUT1 /LINEAR CONTROL		Seconds
04 SET FILTER	40036	Unsigned Integer	1	R/W	mA OUTPUT2 /LINEAR CONTROL		Seconds
07 SCALE 0mA_4mA	40037	Unsigned Integer	1	R/W	mA OUTPUT1 /LINEAR CONTROL		0: 0 - 20mA 1: 4 - 20mA
07 SCALE 0mA_4mA	40038	Unsigned Integer	1	R/W	mA OUTPUT2 /LINEAR CONTROL		0: 0 - 20mA 1: 4 - 20mA
08 SET LOW VALUE	40039	Float	2	R/W	mA OUTPUT1 /LINEAR CONTROL		Unit of configured source/parameter
08 SET LOW VALUE	40041	Float	2	R/W	mA OUTPUT2 /LINEAR CONTROL		Unit of configured source/parameter
09 SET HIGH VALUE	40043	Float	2	R/W	mA OUTPUT1 /LINEAR CONTROL		Unit of configured source/parameter
09 SET HIGH VALUE	40045	Float	2	R/W	mA OUTPUT2 /LINEAR CONTROL		Unit of configured source/parameter
10 ON ERROR MODE	40047	Unsigned Integer	1	R/W	mA OUTPUT1 /LINEAR CONTROL		0: HOLD 1: SET TRANSFER
04 ON ERROR MODE	40047	Unsigned Integer	1	R/W	mA OUTPUT1 /PID CONTROL		0: HOLD 1: SET TRANSFER
10 ON ERROR MODE	40048	Unsigned Integer	1	R/W	mA OUTPUT2 /LINEAR CONTROL		0: HOLD 1: SET TRANSFER
04 ON ERROR MODE	40048	Unsigned Integer	1	R/W	mA OUTPUT2 /PID CONTROL		0: HOLD 1: SET TRANSFER
VERSION	40057	Float	2	R			Software Version Number of Application Code
LOCATION	40061	String	8	R/W			String
12 LOG INTERVAL	40069	Unsigned Integer	1	R/W	mA OUTPUT1 /LINEAR CONTROL		0: OFF 5: 5min 10: 10min 15: 15min 20: 20min 30: 30min
17 LOG INTERVAL	40069	Unsigned Integer	1	R/W	mA OUTPUT1 /PID CONTROL		0: OFF 5: 5min 10: 10min 15: 15min 20: 20min 30: 30min
12 LOG INTERVAL	40070	Unsigned Integer	1	R/W	mA OUTPUT2 /LINEAR CONTROL		0: OFF 5: 5min 10: 10min 15: 15min 20: 20min 30: 30min

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Name	Register	Data Type	Length	Access Mode	Discrete Range	Min / Max	Description
17 LOG INTERVAL	40070	Unsigned Integer	1	R/W	mA OUTPUT2 /PID CONTROL		0: OFF 5: 5min 10: 10min 15: 15min 20: 20min 30: 30min
INPUT1	40073	Float	2	R			Unit of configured source/parameter
INPUT2	40075	Float	2	R			Unit of configured source/parameter
01 DATA VIEW	40077	Unsigned Integer	1	R/W	mA OUTPUT1 /LINEAR CONTROL		0: INPUT VALUE 1: CURRENT
01 DATA VIEW	40077	Unsigned Integer	1	R/W	mA OUTPUT1 /PID CONTROL		0: INPUT VALUE 1: CURRENT
01 DATA VIEW	40078	Unsigned Integer	1	R/W	mA OUTPUT2 /LINEAR CONTROL		0: INPUT VALUE 1: CURRENT
01 DATA VIEW	40078	Unsigned Integer	1	R/W	mA OUTPUT2 /PID CONTROL		0: INPUT VALUE 1: CURRENT
06 MAXIMUM	40090	Float	2	R/W	mA OUTPUT1 /LINEAR CONTROL		Maximum output current
06 MAXIMUM	40090	Float	2	R/W	mA OUTPUT1 /PID CONTROL		Maximum output current
06 MAXIMUM	40092	Float	2	R/W	mA OUTPUT2 /LINEAR CONTROL		Maximum output current
06 MAXIMUM	40092	Float	2	R/W	mA OUTPUT2 /PID CONTROL		Maximum output current
05 MINIMUM	40094	Float	2	R/W	mA OUTPUT1 /PID CONTROL		Minimum output current
05 MINIMUM	40096	Float	2	R/W	mA OUTPUT2 /PID CONTROL		Minimum output current
08 SET MODE	40108	Unsigned Integer	1	R/W	mA OUTPUT1 /PID CONTROL		0: AUTOMATIC 1: MANUAL
08 SET MODE	40109	Unsigned Integer	1	R/W	mA OUTPUT2 /PID CONTROL		0: AUTOMATIC 1: MANUAL
09 MANUAL OUTPUT	40110	Float	2	R/W	mA OUTPUT1 /PID CONTROL		Unit of configured source/parameter
09 MANUAL OUTPUT	40112	Float	2	R/W	mA OUTPUT2 /PID CONTROL		Unit of configured source/parameter
11 DEAD ZONE	40114	Float	2	R/W	mA OUTPUT1 /PID CONTROL		Unit of configured source/parameter - Range around Setpoint where PID controller doesn't change output current
11 DEAD ZONE	40116	Float	2	R/W	mA OUTPUT2 /PID CONTROL		Unit of configured source/parameter - Range around Setpoint where PID controller doesn't change output current
05 FILTER UNIT	40118	Unsigned Integer	1	R/W	mA OUTPUT1 /LINEAR CONTROL		15: Seconds 16: Minutes 17: Hours 49: Days

Name	Register	Data Type	Length	Access Mode	Discrete Range	Min / Max	Description
05 FILTER UNIT	40119	Unsigned Integer	1	R/W	mA OUTPUT2 /LINEAR CONTROL		15: Seconds 16: Minutes 17: Hours 49: Days

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