Modbus Register
Polymetron 9500 Inductive Conductivity Module

v1.02

HACH®

Be Right™

Polymetron 9500 Inductive Conductivity Module v1.02

Name	Register	Data Type	Length	Access Mode	Discrete Range	Min / Max	Description
Cond value in uS/cm	40001	Float	2	R		0 /9999.0	The conductivity value in uS/cm
TEMP C	40003	Float	2	R		-999.9 /999.9	The temperature value in degree C
CONC VALUE	40005	Float	2	R		0 /200	The concentration measurement.(Unit: %)
TDS VALUE	40007	Float	2	R		0 /99999	The TDS measurement.(Unit: ppm)
SALINITY VALUE	40009	Float	2	R		2 /42	The salinity measurement (Unit:ppt)
Cond value in mS/cm	40013	Float	2	R		0 /9999.0	The conductivity value in mS/cm
Cond value in S/cm	40015	Float	2	R		0 /100.0	The conductivity value in S/cm
SOLN VALUE	40023	Float	2	R		0 /9999.9	The conductivity solution value
HTRY COND	40039	Float	2	R		0 /2000000	The conductivity measurement in cal history.(Applicable for Conductivity/Resistivity)
HTRY CONC	40043	Float	2	R		0 /101	The concentration measurement in cal history.(Applicable for Concentration)
HTRY TDS	40047	Float	2	R		0 /99999	The TDS measurement in cal history.(Applicable for TDS)
HTRY SALINITY	40051	Float	2	R		0 /10000	The salinity measurement in cal history.(Applicable for Salinity)
HTRY TGED FMAT	40055	Unsigned Integer	2	R		0 /2000000000	The display format tag in cal history
HTRY COND SOLN	40057	Float	2	R		0 /2000000	The conductivity solution value in cal history.(Applicable for Cond soln)
HTRY CELL VAL	40063	Float	2	R		2.0 /13	The cell constant value in cal history
RANGE 1	40065	Float	2	R		-999999.9 /999999.9	The zero value at range 1 in cal history
RANGE 2	40067	Float	2	R		-999999.9 /999999.9	The zero value at range 2 in cal history
RANGE 3	40069	Float	2	R		-999999.9 /999999.9	The zero value at range 3 in cal history
RANGE 4	40071	Float	2	R		-999999.9 /999999.9	The zero value at range 4 in cal history
RANGE 5	40073	Float	2	R		-999999.9 /999999.9	The zero value at range 5 in cal history
TEMP F	40081	Float	2	R		-999.9 /999.9	The temperature value in degree F
SENSOR NAME	40087	String	8	R/W			The sensor name
HTRY TEMP UNITS	40097	Unsigned Integer	1	R	U25 /26		The temperature units-C or F in cal history
FILTER	40098	Unsigned Integer	1	R/W		0 /200	The filter value in Sec.
USER TEMP C	40101	Float	2	R/W		-20 /200	The temperature user value in degree C
USER TEMP F	40103	Float	2	R/W		0 /392	The temperature user value in degree F
OUTPUT MODE	40105	Unsigned Integer	1	R/W	0 /1 /2		The output mode during calibration:0-ACTIVE
CAL LEAVE	40106	Unsigned Integer	1	R/W	0 /1 /2		The leave option during calibration:0-QUIT_CAL
SOFTWARE VERS	40107	Float	2	R		0 /100	The application code version
SENSOR SERIAL NUMBER	40109	String	8	R/W			The sensor serial number
BOOTLOADER VERS	40117	Float	2	R		0 /9.99	The boot code version
SENSOR DAYS	40120	Unsigned Integer	1	R		0 /32000	The sensor operation days
DRIVER VERS	40121	Unsigned Integer	1	R		0 /999	The device driver version
CELL CONSTANT	40126	Float	2	R/W		2 /13	The cell constant value
SOLN REF TEMP	40130	Float	2	R/W		-20 /200	The reference temperature value entered by user in Conductivity solution calibration.(Unit:degC)

HACH®
Be Right™

Polymetron 9500 Inductive Conductivity Module v1.02

Name	Register	Data Type	Length	Access Mode	Discrete Range	Min / Max	Description
SOLN TEMP SLOPE	40132	Float	2	R/W		0.0 /4.2	The temperature slope entered by user in Cond Soln calibration.(Unit:%/degC)
LINEAR REF TEMP	40134	Float	2	R/W		-20 /200	The reference temperature value in linear T compensation(Unit : degC)
LINEAR TEMPSLOPE	40136	Float	2	R/W		0 /4	The temperature slope value in linear T compensation(Unit: %/degC)
USER ENTER COND VALUE	40140	Float	2	R/W		0 /9999.99	The conductivity value entered by user in sample calibration.(Applicable for Conductivity)
USER ENTER SOLN VAL	40142	Float	2	R/W		0 /9999.9	The Soln value entered by user in soln calibration.
USER ENTER CONC VALUE	40144	Float	2	R/W		0 /200	The concentration value entered by user in sample calibration:(Applicable for Concentration)
USER ENTER TDS	40146	Float	2	R/W		0 /99999.9	The TDS value entered by user in sample calibration.(Applicable for TDS)
USER ENTER SALINITY	40148	Float	2	R/W		2 /42	The salinity value enter by user in sample calibration.(Applicable for Salinity)
TDS FACTOR	40156	Float	2	R/W		0.01 /99.99	The TDS factor (Unit:ppm/uS)
TABLE ACTION	40158	Unsigned Integer	1	R/W	0 /1 /2		The action option in user table configuration:0-INSERT_POINT
X UNITS	40160	Unsigned Integer	1	R	U50 /51 /32 /37 /2 /31 /10 /25 /26		The X units in user table: 50-uS/cm
Y UNITS	40161	Unsigned Integer	1	R	U50 /51 /32 /37 /2 /31 /10 /25 /26		The Y units in user table:50-uS/cm
P2	40164	Unsigned Integer	1	R/W	0 /1		The X2 point in user table
P3	40165	Unsigned Integer	1	R/W	0 /1 /2		The X3 point in user table
P4	40166	Unsigned Integer	1	R/W	0 /1 /2 /3		The X4 point in user table
P5	40167	Unsigned Integer	1	R/W	0 /1 /2 /3 /4		The X5 point in user table
P6	40168	Unsigned Integer	1	R/W	0 /1 /2 /3 /4 /5		The X6 point in user table
P7	40169	Unsigned Integer	1	R/W	0 /1 /2 /3 /4 /5 /6		The X7 point in user table
P8	40170	Unsigned Integer	1	R/W	0 /1 /2 /3 /4 /5 /6 /7		The X8 point in user table
P9	40171	Unsigned Integer	1	R/W	0 /1 /2 /3 /4 /5 /6 /7 /8		The X9 point in user table
P10	40172	Unsigned Integer	1	R/W	0 /1 /2 /3 /4 /5 /6 /7 /8 /9		The X10 point in user table
RAW COND	40175	Float	2	R		0 /2000000	The raw conductivity value- not temperature compensated
RAW COND SIGNAL	40177	Float	2	R		0 /2000000	The raw conductance value
DATE	40189	Time2	2	R			The last cal date
TIME	40191	Time2	2	R			The last cal time
STATUS	40193	Unsigned Integer	1	R	0 /1		The last cal status
OP ID	40195	String	2	R/W			The operator initilals
CAL DAYS	40197	Unsigned Integer	1	R		0 /10000	The days since last calibration.
MESSAGES	40198	Unsigned Integer	1	R	0 /1 /2 /3 /4 /5 /6 /7 /8 /9 /10 /11 /12 /13 /14		The cal message:1-CAL_READY
CARD SERIAL NO	40199	String	6	R			The module serial number

HACH®
Be Right™

Polymetron 9500 Inductive Conductivity Module v1.02

Name	Register	Data Type	Length	Access Mode	Discrete Range	Min / Max	Description
LOG FLOAT	40205	Float	2	R		-9999999.9 /9999999.9	The float data type in configuration-change event
LOG TEXT	40207	String	8	R			The text data type in configuration-change event
LOG INT	40215	Integer	1	R		-32768 /32767	The integer data type in configuration-change event
LOG PARAM	40216	String	8	R			The parameter in configuration-change event
DATE 1	40224	Time2	2	R			The date 1 in cal history
DATE 2	40226	Time2	2	R			The date 2 in cal history
DATE 3	40228	Time2	2	R			The date 3 in cal history
DATE 4	40230	Time2	2	R			The date 4 in cal history
DATE 5	40232	Time2	2	R			The date 5 in cal history
DATE 6	40234	Time2	2	R			The date 6 in cal history
TIME 1	40236	Time2	2	R			The time 1 in cal history
TIME 2	40238	Time2	2	R			The time 2 in cal history
TIME 3	40240	Time2	2	R			The time 3 in cal history
TIME 4	40242	Time2	2	R			The time 4 in cal history
TIME 5	40244	Time2	2	R			The time 5 in cal history
TIME 6	40246	Time2	2	R			The time 6 in cal history
PAGE NO.	40248	Unsigned Integer	1	R		0 /65535	The page number in cal history
RESUME READING	40251	Unsigned Integer	1	R/W	0 /1 /2 /3 /4 /5 /6 /7 /8 /9 /10		The resume reading time delay after calibration:0-lMANUAL
VALUE	40255	Float	2	R		0 /999999.9	The sense/drive ration value
SENSE	40257	Float	2	R		0 /5000.0	The sense value
DRIVE	40259	Float	2	R		0 /5000.0	The drive value
OFFSET	40261	Float	2	R		0 /5000	The offset value
SET RES VALUE	40267	Float	2	R/W		0 /999999	The resistor value for factory cal
SELECT RANGE	40269	Integer	1	R/W		0 /5	The range selection
SET GAIN	40270	Float	2	R/W		0 /999999.9	The gain constant for each range
SET DELTA VALUE	40272	Float	2	R/W		-99999.99 /99999.99	The manual delta correction
PhaseShift ICO	40279	Unsigned Integer	1	R/W		0 /65535	The phase shift value
PhaseShift ICO	40280	Unsigned Integer	1	R		0 /65535	The phase shift value in cal history for zero calibration.
NewSensor ICO	40289	Unsigned Integer	1	R/W	1 /0		The new sensor option - yes or no
TEMP CAL RAW	40294	Float	2	R		-999.9 /999.9	The temperture cal raw value (in user units)
TEMP CAL OFFSET	40296	Float	2	R/W		-999.9 /999.9	The temperature cal offset value.
TEMP CAL USER	40298	Float	2	R/W		-999.9 /999.9	The temperature value entered by user in temperature calibration. (in user units)
DD CONTENT	40300	Unsigned Integer	1	R		0 /999	The device driver content version
RESIST VALUE	40301	Float	2	R		0 /2000000	The resistivity measurement tag
RESISTIVITY UNIT	40303	Unsigned Integer	1	R/W	U155 /156 /169		The resistvity units selection.(155 - <Ohm>.cm
USER ENTER RES VALUE	40304	Float	2	R/W		0 /9999.99	The resistivity value entered by user in sample calibration
HTRY TEMP OFFSET	40306	Float	2	R		-200 /200	The temperature offset calibration in cal histrory
CAL FACTOR	40308	Float	2	R		0 /2	Calibration factor adjusted in Calibration for TDS
CAL SLOPE	40310	Float	2	R		0 /2	Calibration slope adjusted in calibration for Conductivity and Resistivity
Calibration Slope	40312	Float	2	R		0 /2	Calibration slope adjusted in sample calibration in TDS

HACH®
Be Right™

Polymetron 9500 Inductive Conductivity Module v1.02

Name	Register	Data Type	Length	Access Mode	Discrete Range	Min / Max	Description
Calibration Factor	40314	Float	2	R		0 /2	Calibration factor adjusted in sample calibration
RES VALUE	40316	Float	2	R		0 /1000000	Measure resistor value in resistor calibration.
USER ENTER RES VALUE	40318	Float	2	R/W		0.01 /10000	Resistor value entered by user in resistor calibration.
AutoRangeHART ICO	40320	Float	2	R		0 /10	
COND UNIT	40322	Float	2	R		0 /60	The conductivity units list- (0-Auto (applicable only for conductivity)
RESISTIVITY UNIT	40326	Float	2	R		0 /180	The resistivity units selection.(155 - <Ohm>.cm
TEMP UNIT	40328	Float	2	R		0 /30	The temperature units.(25 - degC or26 - degF)
PARAMETERS	40330	Float	2	R		0 /10	The measurement parameter.(0-Conductivity
DISPLAY FORMAT	40332	Float	2	R		0 /10	The display format: (0-AUTO
TEMP ELEMENT	40334	Float	2	R		0 /10	The temperature element type - (0-PT100
SENS INTERVAL	40336	Float	2	R		0 /10	The sensor data log interval:(0-5_sec
TEMP COMP TYPE	40338	Float	2	R		0 /10	The cond temperature compensation type-(0- linear
TDS FACTOR TYPE	40340	Float	2	R		0 /10	TDS compensation type - (0-NaCl or 1-Custom)
CONC COMP TYPE	40342	Float	2	R		0 /10	The concentration compensation type-(0-built-in or 1-user table)
BUILT-IN SET CHEMICAL	40344	Float	2	R		0 /20	The built-in conc compensation type:(1-H3PO4_0_40%
CAL REMINDER	40346	Float	2	R		0 /10	The cal reminder option: (0- OFF
OP ID ENABLE/DISABLE	40348	Float	2	R		0 /10	The OP ID:(0-Enable or 1- Disable)
FACT CAL RANGE	40350	Float	2	R		0 /10	The range number selection:(0-R1___1_OHM
CAL TYPE	40352	Float	2	R		0 /50	Calibration type during last calibration:(0=default
HTRY TEMP	40354	Float	2	R		-100 /200	The temperature value in user selected unit in cal history
New Sensor Select(Yes/No)	40356	Float	2	R		0 /10	New Sensor Select(1=Yes
TDS TC TYPE	40360	Float	2	R		0 /10	The TDS temperature compensation type - (0-linear

HACH®
Be Right™

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