

Modbus Communication Protocol

Modbus is a serial communications protocol, which allows for communication between many devices connected to the same network. Modbus is configured via the technician menus.

1. To enter the Technician menu, press Menu to enter the operator menu and then press the up arrow and down arrow simultaneously until the menu display changes.
2. Locate the "Modbus com format" in the menu:
 - a. Press Menu until the desired parameter name appears in the LCD display.
 - b. Press OK. "Enter Password 100" appears in the LCD display.
3. Enter the Technician menu password:
 - a. Press the up arrow or down arrow until the correct password number is reached.
 - b. Press OK. The parameter name and current setting appear in the LCD display.

Note

The Technician menu password is different from the Operator menu password. The default Technician menu password is 456 and if lost, can only be reset by replacing the chipset.

4. Press OK again. The LCD display shows the parameter and the current setting.
5. Enter the new parameter setting:
 - a. Press the up arrow or down arrow until the desired parameter value is reached, according to the options listed in table 1.
 - b. The second row of the menu display, below the value that is being changed, shows the current value.
6. Press Enter to save the new setting or Esc to abort without saving the new setting.

Table 1: Modbus Configuration Options

Parameter's value	Bit 4 2 stop / 1 stop bit	Bit 3 Floating point / Swapped floating point	Bit 2 19200bps / 9600bps	Bit 1 Parity Even / Odd	Bit 0 Parity / No parity
0	0	0	0	0	0
1	0	0	0	0	1
2	0	0	0	1	0
3	0	0	0	1	1
4	0	0	1	0	0
5	0	0	1	0	1
6	0	0	1	1	0
7	0	0	1	1	1
8	0	1	0	0	0
9	0	1	0	0	1



Parameter's value	Bit 4 2 stop / 1 stop bit	Bit 3 Floating point / Swapped floating point	Bit 2 19200bps / 9600bps	Bit 1 Parity Even / Odd	Bit 0 Parity / No parity
10	0	1	0	1	0
11	0	1	0	1	1
12	0	1	1	0	0
13	0	1	1	0	1
14	0	1	1	1	0
15	0	1	1	1	1
16	1	0	0	0	0
17	1	0	0	0	1
18	1	0	0	1	0
19	1	0	0	1	1
20	1	0	1	0	0
21	1	0	1	0	1
22	1	0	1	1	0
23	1	0	1	1	1
24	1	1	0	0	0
25	1	1	0	0	1
26	1	1	0	1	0
27	1	1	0	1	1
28	1	1	1	0	0
29	1	1	1	0	1
30	1	1	1	1	0
31	1	1	1	1	1

Table 2: Modbus communications options

Parameter's Name	Type	Address	Notes
Chlor main pump	Coil	0	
Chlor Addition. pump	Coil	1	
Acid/ Base Pump	Coil	2	
Turbidity cleaner	Coil	3	
Temperature control	Coil	4	
Alarm Lamp	Coil	5	
Low Reagent	Discrete Input	10015	
Alkali/Acid	Discrete Input	10016	
Flow sensor connection	Discrete Input	10017	
Turbidity module connection	Discrete Input	10018	
Chlorine averaging enable	Discrete Input	10019	
Chlorine <0.1 alarm enable	Discrete Input	10020	
Celsius/Fahrenheit	Discrete Input	10021	
Total Chlorine On/Off	Discrete Input	10022	
M3/H / GPM	Discrete Input	10023	
Free chlorine On/Off	Discrete Input	10024	
ORP On/Off	Discrete Input	10025	
pH On/Off	Discrete Input	10026	
Conductivity 4-20(1) On/Off	Discrete Input	10027	
No Flow	Discrete Input	10032	

Parameter's Name	Type	Address	Notes
Low Flow	Discrete Input	10033	
No Reagents	Discrete Input	10034	
Chlorine<0.1	Discrete Input	10035	
ORP>XXX	Discrete Input	10036	
Unclean cell	Discrete Input	10037	
Replace light	Discrete Input	10038	
Low chlor.	Discrete Input	10039	
High chlor.	Discrete Input	10040	
Low Ph	Discrete Input	10041	
High Ph	Discrete Input	10042	
Low ORP	Discrete Input	10043	
High NTU	Discrete Input	10044	
External OFF	Discrete Input	10046	
Colorimetr comm. error	Discrete Input	10047	
High total chlor	Discrete Input	10048	
High combine chlorine	Discrete Input	10049	
No DPD3	Discrete Input	10050	
Chlor overfeed time	Discrete Input	10051	
Ph overfeed time	Discrete Input	10052	
Piston stuck	Discrete Input	10053	
Low temperature	Discrete Input	10054	
High temperature	Discrete Input	10055	
Free chlorine	Input Register	30000	Floating point IEEE-754
pH	Input Register	30002	Floating point IEEE-754
Redox	Input Register	30004	Floating point IEEE-754
Temperature	Input Register	30006	Floating point IEEE-754
Flow	Input Register	30008	Floating point IEEE-754
Turbidity	Input Register	30010	Floating point IEEE-754
Total chlorine	Input Register	30012	Floating point IEEE-754
Combine chlorine	Input Register	30014	Floating point IEEE-754
Conductivity	Input Register	30016	Floating point IEEE-754
Colorimeter alarms	Input Register	30018	bit0 - Low Reagent bit1- No Reagents bit2 - No DPD3 bit3 - No Flo bit4 - External OFF bit5 - Unclean cell bit6 - Replace light bit7 - Colorimeter communication Error bit8 - Piston stuck