

Modbus-XML Protocol Specification



PoolManager® / Analyt

Index

| | | |
|-----|------------------------------------------------------|---|
| 1 | Term Definitions..... | 4 |
| 2 | Overview..... | 4 |
| 3 | Adressing | 4 |
| 4 | Read Parameter Values (Modbus Function 04)..... | 4 |
| 4.1 | Register Data Adresses | 4 |
| 4.2 | Example | 5 |
| 5 | Read Measurement Readings (Modbus Function 04) | 5 |
| 5.1 | Register Data Adresses | 5 |
| 5.2 | Example | 5 |
| 6 | Read Alarm Statuses (Modbus Function 02)..... | 5 |
| 6.1 | Register Data Adresses | 5 |
| 6.2 | Example | 7 |

1 Term Definitions

This document refers to all members of the 5th generation of the BAYROL PoolManager® and Analyt swimming pool controller families (from 2012).

In the following chapters, the term PoolManager® will be used, representing all members of the BAYROL PoolManager® and Analyt swimming pool controller families:

- PoolManager® Chlorine / Bromine / Oxygen
- PoolManager® PRO
- Analyt 2
- Analyt 3 / Analyt 3 Hotel

2 Overview

The PoolManager® swimming pool controllers support a XML based data protocol over a TCP/IP network connection, which allows Building Management or other external systems to read out measurement readings, parameter values and alarm statuses from the controller.

The XML data structures can be read with HTTP GET requests. The PoolManager® swimming pool controller must be connected to the same TCP/IP network as the client system (e.g. the building management system), which reads out the data.

Refer to the PoolManager® user manual for details about the network connection (chapter Network Connection and following chapters).



Important Notice

Software Release 4.3.0 or later required

The XML data protocol is available from software release 4.3.0 (May 2013). Controllers with a previous

software release can easily be updated with a USB memory stick.

The latest software release can be downloaded from <http://www.poolmanager.info>

→ Menu Service



User name = partner

Password = pool

3 Addressing

The XML data protocol uses HTTP requests and IP network addresses. The PoolManager® controller uses a static IP address within the local network.



Press  and then  to display a help page which indicates the IP address of the PoolManager® (amongst others)

4 Read Parameter Values (item type 34)

<http://xxx.xxx.xxx.xxx/cgi-bin/webgui.fcgi?xmlitem=34.aaaa>

xxxx.xxxx.xxxx.xxxx = PoolManager® IP address

aaaa = parameter address

4.1 Parameter Addresses

aaaa indicates the parameter addresses

| aaaa | English | German | French | Spanish | Unit | Decimals | Min. | Max. |
|------|------------------------------------------|---------------------------------|-----------------------------------------|--------------------------------------------|------|----------|------|------|
| 3001 | Setpoint pH | Sollwert pH | Valeur de consigne pH | Valor nominal de pH | pH | 2 | 600 | 850 |
| 3002 | Lower Alarm threshold pH | Untere Alarmgrenze pH | Seuil d'alarme inférieur pH | Umbral inferior de alarma de pH | pH | 2 | 0 | 850 |
| 3003 | Upper Alarm threshold pH | Obere Alarmgrenze pH | Seuil d'alarme supérieur pH | Umbral superior de alarma de pH | pH | 2 | 600 | 999 |
| 3017 | Setpoint Chlorine / Bromine | Sollwert Chlor / Brom | Valeur de consigne chlore / brome | Valor nominal de cloro / bromo | mg/l | 2 | 0 | 999 |
| 3018 | Lower Alarm threshold Chlorine / Bromine | Untere Alarmgrenze Chlor / Brom | Seuil d'alarme inférieur chlore / brome | Umbral inferior de alarma de cloro / bromo | mg/l | 2 | 0 | 999 |
| 3019 | Upper Alarm threshold Chlorine / Bromine | Obere Alarmgrenze Chlor / Brom | Seuil d'alarme supérieur chlore / brome | Umbral sup. de alarma de cloro / bromo | mg/l | 2 | 0 | 999 |
| 3049 | Setpoint Redox (mV) | Sollwert Redox (mV) | Valeur de consigne Redox (mV) | Valor nominal de redox (mV) | mV | 0 | 0 | 999 |
| 3050 | Setpoint Redox (mV) | Sollwert Redox (mV) | Valeur de consigne Redox (mV) | Valor nominal de redox (mV) | mV | 0 | 0 | 999 |
| 3051 | Lower Alarm threshold Redox (mV) | Untere Alarmgrenze Redox (mV) | Seuil d'alarme inférieur Redox (mV) | Umbral inferior de alarma de redox (mV) | mV | 0 | 0 | 999 |
| 3052 | Lower Alarm threshold Redox (mV) | Untere Alarmgrenze Redox (mV) | Seuil d'alarme inférieur Redox (mV) | Umbral inferior de alarma de redox (mV) | mV | 0 | 0 | 999 |
| 3053 | Upper Alarm threshold Redox (mV) | Obere Alarmgrenze Redox (mV) | Seuil d'alarme supérieur Redox (mV) | Umbral sup. de alarma de redox (mV) | mV | 0 | 0 | 999 |
| 3054 | Upper Alarm threshold Redox (mV) | Obere Alarmgrenze Redox (mV) | Seuil d'alarme supérieur Redox (mV) | Umbral sup. de alarma de redox (mV) | mV | 0 | 0 | 999 |
| 3069 | Lower Alarm Threshold T1 | Untere Alarmgrenze T1 | Seuil d'alarme inférieur T1 | Umbral inferior de alarma de T1 | °C | 1 | 0 | 500 |
| 3070 | Upper Alarm Threshold T1 | Obere Alarmgrenze T1 | Seuil d'alarme supérieur T1 | Umbral superior de alarma de T1 | °C | 1 | 0 | 500 |
| 3074 | Lower Alarm Threshold T2 | Untere Alarmgrenze T2 | Seuil d'alarme inférieur T2 | Umbral inferior de alarma de T2 | °C | 1 | 0 | 500 |
| 3075 | Upper Alarm Threshold T2 | Obere Alarmgrenze T2 | Seuil d'alarme supérieur T2 | Umbral superior de alarma de T2 | °C | 1 | 0 | 500 |
| 3079 | Lower Alarm Threshold T3 | Untere Alarmgrenze T3 | Seuil d'alarme inférieur T3 | Umbral inferior de alarma de T3 | °C | 1 | 0 | 500 |

| | | | | | | | | |
|------|------------------------------------|----------------------------------|-------------------------------|----------------------------------------|----|---|---|-----|
| 3080 | Upper Alarm Threshold T3 | Obere Alarmgrenze T3 | Seuil d'alarme supérieur T3 | Umbral superior de alarma de T3 | °C | 1 | 0 | 500 |
| 3084 | Basic dosing amount O2 (BayroSoft) | Grund-Dosiermenge O2 (BayroSoft) | Dosage de base O2 (BayroSoft) | Cantidad dosif. de base O2 (Bayrosoft) | l | 1 | 0 | 999 |

4.2 Example

Read the pH setpoint at address 3001:

HTTP GET Request: <http://192.168.1.111/cgi-bin/webgui.fcgi?xmlitem=34.3001>

192.168.1.111 is the IP address of the PoolManager® controller.

34 is the item type (numerical parameter).

XML reply:

```
<pm5>
  <item type="34" id="3001" label="Setpoint pH" unit="pH" value="7.20"/>
</pm5>
```

The value is 7.20 pH.

The XML reply also contains a label for the parameter read (" Setpoint pH") und a label for the physical unit ("pH").

Both labels are given in the current menu language of the PoolManager® controller).

5 Read Measurement Readings (item type 34)

5.1 Parameter Addresses

aaaa indicates the parameter addresses

<http://xxx.xxx.xxx.xxx/cgi-bin/webgui.fcgi?xmlitem=34.aaaa>

xxxx.xxxx.xxxx.xxxx = PoolManager® IP address

| aaaa | English | German | French | Spanish | Unit | Decimals | Min. | Max. |
|------|----------------------------------------|--------------------------------------|--------------------------------------|----------------------------------------|------|----------|------|------|
| 4001 | pH | pH | pH | pH | pH | 2 | 0 | 999 |
| 4008 | Cl (free chlorine) / Br (free bromine) | Cl (freies Chlor) / Br (freies Brom) | Cl (chlore libre) / Br (brome libre) | Cl (free chlorine) / Br (free bromine) | mg/l | 2 | 0 | 999 |
| 4022 | Redox | Redox | Redox | Redox | mV | 0 | 0 | 999 |
| 4033 | T1 (temperature 1) | T1 (Temperatur 1) | T1 (temperature 1) | T1 (temperature 1) | °C | 1 | 100 | 500 |
| 4047 | Battery | Batterie | Batterie | Bateria | V | 2 | 0 | 500 |
| 4069 | T2 (temperature 2) | T2 (Temperatur 2) | T2 (temperature 2) | T2 (temperature 2) | °C | 1 | 100 | 500 |
| 4071 | T3 (temperature 3) | T3 (Temperatur 3) | T3 (temperature 3) | T3 (temperature 3) | °C | 1 | 100 | 500 |
| 4077 | O2 (dosed amount O2) | O2 (dosierte Menge O2) | O2 (quantité dosée O2) | O2 (dosed amount O2) | l | 1 | 0 | 999 |

5.2 Example

Read current pH measurement at address 4001:

HTTP GET Request: <http://192.168.1.111/cgi-bin/webgui.fcgi?xmlitem=34.4001>

192.168.1.111 is the IP address of the PoolManager® controller.

34 is the item type (numerical parameter).

XML reply:

```
<pm5>
  <item type="34" id="4001" label="pH" unit="pH" value="7.25"/>
</pm5>
```

The value is 7.25 pH.

The XML reply also contains a label for the parameter read ("pH") und a label for the physical unit (also "pH" in this example).

Both labels are given in the current menu language of the PoolManager® controller.

6 Read Alarm Statuses (item type 44)

6.1 Register Data Addresses

aaaa indicates the parameter addresses

<http://xxx.xxx.xxx.xxx/cgi-bin/webgui.fcgi?xmlitem=44.aaaa>

xxxx.xxxx.xxxx.xxxx = PoolManager® IP address

aaaa = alarm status address

| aaaa | English | German | French | Spanish |
|------|---------------------------------|---------------------------------|----------------------------------------|-----------------------------------------|
| 2001 | Collective alarm | Sammelalarm | Alarme collective | Collective alarm |
| 2002 | Power-on Delay | Einschaltverzögerung | Temporisation de l'activation | Inicio retardado |
| 2003 | No flow signal (input flow) | Kein Flow-Signal (Eingang Flow) | Aucun signal débit (entrée débit) | No hay señal de caudal (entrada Flow) |
| 2004 | No flow signal (input IN 1) | Kein Flow-Signal (Eingang IN 1) | Aucun signal débit (entrée IN1) | No hay señal de caudal (entrada IN 1) |
| 2005 | Upper Alarm pH | Oberer Alarm pH | Alarme supérieure pH | Alarma superior de pH |
| 2006 | Lower Alarm pH | Unterer Alarm pH | Alarme inférieure pH | Alarma inferior de pH |
| 2009 | Dosing Alarm pH | Dosier-Alarm pH | Alarme de dosage pH | Alarma de dosificación de pH |
| 2010 | Upper Alarm Chlorine / Bromine | Oberer Alarm Chlor / Brom | Alarme supérieure chlore / brome | Alarma superior de cloro / bromo |
| 2011 | Lower Alarm Chlorine / Bromine | Unterer Alarm Chlor / Brom | Alarme inférieure chlore / brome | Alarma inferior de cloro / bromo |
| 2012 | Level Alarm Chlorine | Niveau Alarm Chlor | Alarme niveau chlore | Alarma de nivel de cloro |
| 2013 | Level Warning Chlorine | Niveau-Warnung Chlor | Avertissement niveau chlore | Aviso de nivel de cloro |
| 2014 | Dosing Alarm Chlorine / Bromine | Dosier-Alarm Chlor / Brom | Alarme de dosage chlore / brome | Alarma de dosificación de cloro / bromo |
| 2019 | Upper Alarm Redox | Oberer Alarm Redox | Alarme supérieure Redox (mV) | Alarma superior de redox |
| 2020 | Lower Alarm Redox | Unterer Alarm Redox | Alarme inférieure Redox (mV) | Alarma inferior de redox |
| 2021 | Level Alarm Redox | Niveau Alarm Redox | Alarme niveau de Redox (chlore) | Alarma de nivel de redox |
| 2022 | Level Warning Redox | Niveau-Warnung Redox | Avertissement de niveau Redox (chlore) | Aviso de nivel de redox |
| 2023 | Dosing Alarm Redox | Dosier-Alarm Redox | Alarme de dosage Redox | Alarma de dosificación de redox |
| 2024 | Level Alarm O2 (BayroSoft) | Niveau Alarm O2 (BayroSoft) | Alarme niveau O2 (BayroSoft) | Alarma de nivel de O2 (BayroSoft) |
| 2025 | Level Warning O2 | Niveau-Warnung O2 (BayroSoft) | Avertissement niveau O2 (BayroSoft) | Aviso de nivel de O2 (BayroSoft) |
| 2028 | Upper Alarm Temperature T1 | Oberer Alarm Temperatur T1 | Alarme supérieure température T1 | Alarma superior de temperatura T1 |
| 2029 | Lower Alarm Temperature T1 | Unterer Alarm Temperatur T1 | Alarme inférieure température T1 | Alarma inferior de temperatura T1 |
| 2030 | Upper Alarm Temperature T2 | Oberer Alarm Temperatur T2 | Alarme supérieure température T2 | Alarma superior de temperatura T2 |
| 2031 | Lower Alarm Temperature T2 | Unterer Alarm Temperatur T2 | Alarme inférieure température T2 | Alarma inferior de temperatura T2 |
| 2032 | Upper Alarm Temperature T3 | Oberer Alarm Temperatur T3 | Alarme supérieure température T3 | Alarma superior de temperatura T3 |
| 2033 | Lower Alarm Temperature T3 | Unterer Alarm Temperatur T3 | Alarme inférieure température T3 | Alarma inferior de temperatura T3 |
| 2034 | Battery Alarm | Batterie-Alarm | Alarme batterie | Alarma de batería |
| 2035 | Level Alarm pH+ | Niveau Alarm pH+ | Alarme niveau pH+ | Alarma de nivel de pH-Plus |
| 2036 | Level Warning pH+ | Niveau-Warnung pH+ | Avertissement niveau pH+ | Avisa de nivel de pH-Plus |
| 2037 | Level Alarm pH- | Niveau Alarm pH- | Alarme niveau pH- | Alarma de nivel de pH-Minus |
| 2038 | Level Warning pH- | Niveau-Warnung pH- | Avertissement niveau pH- | Avisa de nivel de pH-Minus |
| 2039 | Level Alarm Flockmatic | Niveau Alarm Flockmatic | Alarme niveau Flockmatic | Alarma de nivel de Flockmatic |

6.2 Example

Read the collective alarm status (summary of all alarms) at address 2001:

HTTP GET Request: `http://192.168.1.111/cgi-bin/webgui.fcgi?xmlitem=44.2001`

192.168.1.111 is the IP address of the PoolManager® controller.

44 is the item type (alarm or other status).

XML reply:

```
<pm5>
  <item type="44" id="2001" label="Collective Alarm" active="1" displayed="1"/>
</pm5>
```

The collective alarm is currently active and also displayed on the PoolManager® controller (it is possible, that an alarm is not active anymore but still displayed, because it has not yet been quit by the user).

The XML reply also contains a label for the given alarm ("Collective Alarm"). The label is given in the current menu language of the PoolManager® controller

7 Read Alarm List (item type 1)

http://xxx.xxx.xxx.xxx/cgi-bin/webgui.fcgi?xmlitem=1.1092

xxxx.xxxx.xxxx.xxxx = PoolManager® IP address

1092 = address of the alarm list

7.1 Example

Read the list of all displayed alarms at address 1092:

HTTP GET Request: `http://192.168.1.111/cgi-bin/webgui.fcgi?xmlitem=1.1092`

192.168.1.111 is the IP address of the PoolManager® controller.

1 is the item type (alarm list or other menu).

XML reply:

```
<pm5>
  <item type="1" id="1092" label="Alarm Overview">
    <item type="44" id="2005" label="Upper Alarm pH" active="1" displayed="1"/>
    <item type="44" id="2038" label="Level Warning pH- (0.7 l)" active="1" displayed="1"/>
    <item type="44" id="2014" label="Dosing Alarm Chlorine" active="1" displayed="1"/>
  </item>
</pm5>
```

The alarm list contains three alarms. All three alarms are active and also displayed on the PoolManager® controller (it is possible, that an alarm is not active anymore but still displayed, because it has not yet been quit by the user).

The XML reply also contains a labels for the menu ("Alarm Overview") and for every alarm in the list. All labels are given in the current menu language of the PoolManager® controller.