IP Meter

XML Posting System

Copyright (C) 2012 Northern Design (Electronics) Ltd

Northern Design (Electronics) Ltd, Bolton Road, BRADFORD BD3 0QW, UK
Tel: +44 (0) 1274 750 620 Fax: +44 (0) 1274 721 074 E-mail: sales@ndmeter.co.uk www.ndmeter.co.uk

Introduction

The IP Meters can be configured to send logged data using HTTP posting to a web server.

The POST function is used to avoid traffic being blocked by firewalls.

Logged and Posted Parameters

The IP Meter can be configured to log any of 52 parameters, according to the following table;

Param	Desc	Param	Desc	Param	Desc	Param	Desc
1	skWh	18	p12V	31	p2kVA	44	p1PA
2	skVAh	19	p23V	32	p3kVA	45	p2PA
3	skvarh	20	p31V	33	skVA	46	p3PA
4	sXkWh	21	sF	34	p1kvar	47	p1PV
5	C1	22	p1PF	35	p2kvar	48	p2PV
6	C2	23	p2PF	36	p3kvar	49	p3PV
7	C3	24	p3PF	37	skvar	50	DkW
12	p1A	25	sPF	38	p1AD	51	DkVA
13	p2A	26	p1kW	39	p2AD	52	Dkvar
14	p3A	27	p2kW	40	p3AD	53	PHDkW
15	p1V	28	p3kW	41	p1VD	54	PHDkVA
16	p2V	29	skW	42	p2VD	55	PHDkvar
17	p3V	30	p1kVA	43	p3VD	56	NI

C1, C2 and C3 are the digital input counter values, which can be used for pulse outputs from say gas or water meters.

Posting Interval

The interval at which data is logged and sent can be set. The minimum period is 1 minute, but can be set to anything up to several hours. The data is logged on the minute, sent immediately afterwards and time stamped when it was logged rather than sent. Configurable SNTP settings ensure the IP Meter time is correct.

The IP address of the server to send to and the resource to post to (i.e. DataImport.php) can also be configured, along with a port number if the standard ports 80 or 443 are not used. A shortname, username and password can be specified to prevent unauthorised posting and segregating of multiple customers' data.

Northern Design (Electronics) Ltd, Bolton Road, BRADFORD BD3 0QW, UK
Tel: +44 (0) 1274 750 620 Fax: +44 (0) 1274 721 074 E-mail: sales@ndmeter.co.uk www.ndmeter.co.uk

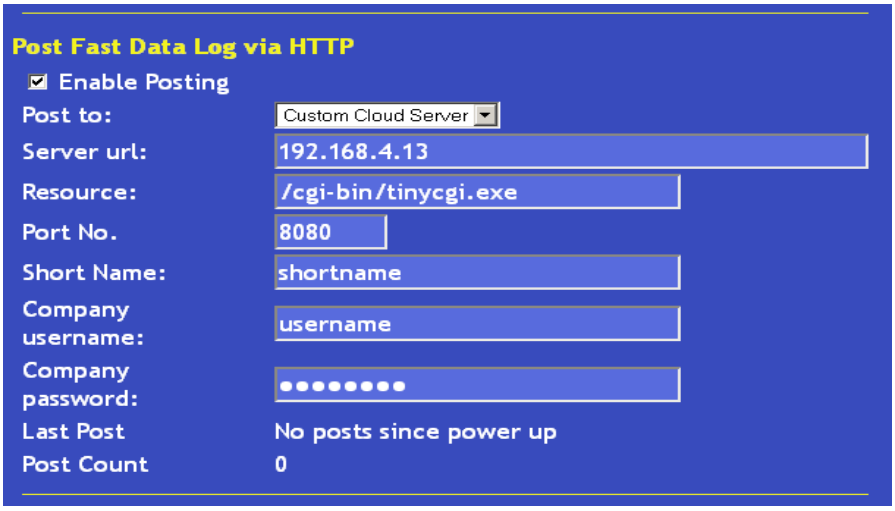

Figure 1 - IP Meter Posting Configuration

XML Format

The data is XML formatted according to the example at the end of this document.

The <Login> section is always supplied, and includes the user definable shortname, username and password. The MAC address is the physical MAC address of the meter.

The <Settings> section is optional and only sent at startup and when a change is made.

The <Readings> section is optional and only sent when posting is first configured and at each time interval as set. The IP Meter will send only one <Readings> section at a time.

The <Parameter> sections are sent according to which parameters are selected for logging. The <PN> section is the parameter number according to the previous table, and the <PV> section is the scaled value for that parameter.

XML File Format;

```
<PostedData>
        <Login>
                <Shortname>shortname</Shortname>
                <Username>username</Username>
                <Password>password</Password>
                <MAC>00:90:c2:db:58:1a</MAC>
        </Login>
        <Settings>
                <NAME>Pool</NAME>
                <VERSION>350.908</VERSION>
                <DHCP>1</DHCP>
                <ADDRESS>192.168.2.142</ADDRESS>
                <MASK>255.255.255.0</MASK>
```


Northern Design (Electronics) Ltd, Bolton Road, BRADFORD BD3 0QW, UK
Tel: +44 (0) 1274 750 620 Fax: +44 (0) 1274 721 074 E-mail: sales@ndmeter.co.uk www.ndmeter.co.uk

```
        <GATEWAY>192.168.2.200</GATEWAY>
        <DNS1>192.168.2.2</DNS1>
        <DNS2>0.0.0.0</DNS2>
        <SNTP>192.168.2.160</SNTP>
        <CT>100</CT>
        <NV>400</NV>
        <P1>1</P1>
        <P2>1</P2>
        <MM>350</MM>
        <MT>3</MT>
        <FV>908</FV>
        <CD>6</CD>
        <PO>1</PO>
        <SP>0</SP>
        <HR>25</HR>
        <PS>1</PS>
        <CON1>32</CON1>
        <VAL1>0</VAL1>
        <CON2>33</CON2>
        <VAL2>0</VAL2>
        <ASCALE>2</ASCALE>
        <VSCALE>2</VSCALE>
        <PSCALE>4</PSCALE>
        <ESCALE>5</ESCALE>
        <LASTPOWER>07-01-2011, 11:18:01</LASTPOWER>
</Settings>
<Reading>
        <Header>
                <Date>21-07-2011</Date>
                <Time> 08:07</Time>
        </Header>
        <Parameter><PN>1</PN><PV> 44670.90</PV></Parameter>
        <Parameter><PN>2</PN><PV> 65595.60</PV></Parameter>
        <Parameter><PN>3</PN><PV> 30596.20</PV></Parameter>
        <Parameter><PN>4</PN><PV> 0.00</PV></Parameter>
        <Parameter><PN>5</PN><PV> 5658.00</PV></Parameter>
        <Parameter><PN>6</PN><PV> 0.00</PV></Parameter>
        <Parameter><PN>7</PN><PV> 0.00</PV></Parameter>
        <Parameter><PN>12</PN><PV> 38.10</PV></Parameter>
        <Parameter><PN>13</PN><PV> 1.00</PV></Parameter>
        <Parameter><PN>14</PN><PV> 29.90</PV></Parameter>
        <Parameter><PN>15</PN><PV> 244.50</PV></Parameter>
        <Parameter><PN>16</PN><PV> 247.60</PV></Parameter>
        <Parameter><PN>17</PN><PV> 251.20</PV></Parameter>
        <Parameter><PN>18</PN><PV> 426.10</PV></Parameter>
```


Northern Design (Electronics) Ltd, Bolton Road, BRADFORD BD3 0QW, UK
Tel: +44 (0) 1274 750 620 Fax: +44 (0) 1274 721 074 E-mail: sales@ndmeter.co.uk www.ndmeter.co.uk

```
        <Parameter><PN>19</PN><PV> 431.90</PV></Parameter>
        <Parameter><PN>20</PN><PV> 429.20</PV></Parameter>
        <Parameter><PN>21</PN><PV> 49.90</PV></Parameter>
        <Parameter><PN>22</PN><PV> 0.616</PV></Parameter>
        <Parameter><PN>23</PN><PV> 0.199</PV></Parameter>
        <Parameter><PN>24</PN><PV> 0.702</PV></Parameter>
        <Parameter><PN>25</PN><PV> 0.649</PV></Parameter>
        <Parameter><PN>26</PN><PV> 5740.00</PV></Parameter>
        <Parameter><PN>27</PN><PV> 50.00</PV></Parameter>
        <Parameter><PN>28</PN><PV> 5280.00</PV></Parameter>
        <Parameter><PN>29</PN><PV> 11080.00</PV></Parameter>
        <Parameter><PN>30</PN><PV> 9310.00</PV></Parameter>
        <Parameter><PN>31</PN><PV> 240.00</PV></Parameter>
        <Parameter><PN>32</PN><PV> 7510.00</PV></Parameter>
        <Parameter><PN>33</PN><PV> 17060.00</PV></Parameter>
        <Parameter><PN>34</PN><PV> 7320.00</PV></Parameter>
        <Parameter><PN>35</PN><PV> 655129.93</PV></Parameter>
        <Parameter><PN>36</PN><PV> 5340.00</PV></Parameter>
        <Parameter><PN>37</PN><PV> 12430.00</PV></Parameter>
        <Parameter><PN>38</PN><PV> 37.90</PV></Parameter>
        <Parameter><PN>39</PN><PV> 1.00</PV></Parameter>
        <Parameter><PN>40</PN><PV> 29.90</PV></Parameter>
        <Parameter><PN>41</PN><PV> 244.70</PV></Parameter>
        <Parameter><PN>42</PN><PV> 244.70</PV></Parameter>
        <Parameter><PN>43</PN><PV> 251.10</PV></Parameter>
        <Parameter><PN>44</PN><PV> 51.70</PV></Parameter>
        <Parameter><PN>45</PN><PV> 1.20</PV></Parameter>
        <Parameter><PN>46</PN><PV> 40.60</PV></Parameter>
        <Parameter><PN>47</PN><PV> 253.20</PV></Parameter>
        <Parameter><PN>48</PN><PV> 254.60</PV></Parameter>
        <Parameter><PN>49</PN><PV> 256.80</PV></Parameter>
        <Parameter><PN>50</PN><PV> 10130.00</PV></Parameter>
        <Parameter><PN>51</PN><PV> 14860.00</PV></Parameter>
        <Parameter><PN>52</PN><PV> 10360.00</PV></Parameter>
        <Parameter><PN>53</PN><PV> 14070.00</PV></Parameter>
        <Parameter><PN>54</PN><PV> 19220.00</PV></Parameter>
        <Parameter><PN>55</PN><PV> 13410.00</PV></Parameter>
        <Parameter><PN>56</PN><PV> 29.80</PV></Parameter>
    </Reading>
</PostedData>
```

Acknowledgement of data

Northern Design (Electronics) Ltd, Bolton Road, BRADFORD BD3 0QW, UK
Tel: +44 (0) 1274 750 620 Fax: +44 (0) 1274 721 074 E-mail: sales@ndmeter.co.uk www.ndmeter.co.uk

Data that is posted by the IP Meter needs to be acknowledged by the receiving system, otherwise it will be retried. The “200 OK” status code should be returned along with a response that contains unformatted plain text (i.e. no HTML tags). If the data has been accepted, then the first 2 characters of the response should be “OK”. Anything else after the “OK” will be ignored. In the event that the data has not been accepted (for example, the login credentials are not correct) then “OK” should not be sent.

Post retry

In the event that the IP Meter is unable to send data to the receiving system, or if the data has been sent but not been acknowledged with an “OK”, then both will continue to resend the data. Since the XML data is time stamped when it was logged, rather than sent, it can be processed retrospectively by the receiving system.

Northern Design (Electronics) Ltd, Bolton Road, BRADFORD BD3 0QW, UK
Tel: +44 (0) 1274 750 620 Fax: +44 (0) 1274 721 074 E-mail: sales@ndmeter.co.uk www.ndmeter.co.uk