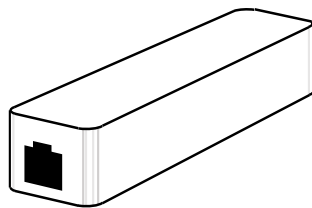


dNode P1

Swedish Standard HAN/P1-port reader for RJ12 interface and DLMS/COSEM protocol translation



Manual And Quick Guide

This document applies to Novion dNode P1 with firmware build SE-Kxxx

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Specifications are subject to change due to further technical developments.
Details presented may be subject to correction.

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1 Introduction

1.1 General information

This document provides information on how to install and use the Novion dNode P1 product.

1.2 Safety instructions

This product is

⚠ Installation must fulfil local safety regulations and ensure the IP classification if the box is modified.

⚠ Users should not be closer than 0.2m when the device is in full operation.

1.3 Verification of validity

The user must ensure this document as valid for the present product.

1.4 Target group

Homeowners with a residential meter equipped with a P1 interface, via resellers.

1.5 Legal disclaimer

Specifications are subject to change due to further technical developments. Details presented may be subject to correction.

This document (Manual and Quick Guide) applies exclusively to dNode P1.

Liability claims against Novion relating to material or immaterial damage caused by the use or non-use of the information contained in the program guide or using incorrect or incomplete information are excluded.

1.6 Compatibility

This product is compatible with the Swedish Smart Meters (residential electricity meter) following to the Swedish Industry recommendation for a local customer interface for electricity meters via a RJ12 hardware interface.

The Standard firmware (* SE builds) supports the Swedish standard implementation of the OBIS (DLMS/COSEM) protocol, which is a variant of the standard IEC62056-21.

Some of the Swedish meters has implemented the standard IEC62056-21 without any changes, like the P1 DSMR. In this case the dNode P1 will need a firmware update.

For this standard please use firmware build * SE

1.7 Compatible Residential Meters

- Landis & Gyr E360
- Aidon 6534
- Iskra AM550
- Sagemcom S211
- Sagemcom T211
- Kaifa MA304

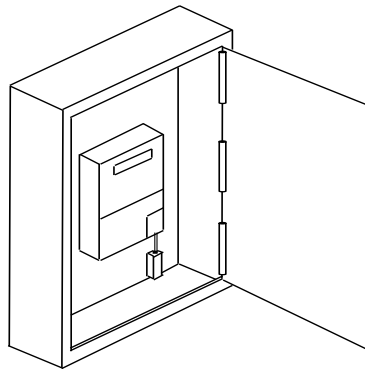
Note! Some of the listed meters comes with the Swedish or Norwegian P1-port. dNode P1 support only the meter versions with the Swedish HAN/P1-port standard, i.e. the supported protocol and a RJ12 hardware interface.

Note! The meter must supply 5V and 250mA via the P1 interface according to the Swedish standard.

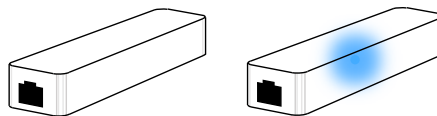
2 Quick Guide – Connect the dNode P1

Please follow this Quick Guide step by step to connect and register the dNode P1 HAN/P1-dongle.

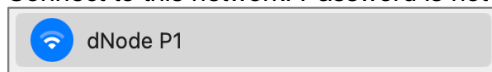
1. Register your product.
 - a. For this step you will need your device's Serial Number. The Serial number is printed on your device, on your box and is also available via the web user interface (see later steps).
 - b. Open a separate browser, and go to the URL:
<https://www.novion.se/dnodep1/register>
 - c. Complete the form and click "Submit"-button.
 - d. Your PIN-code will appear on the screen. Record and save your PIN-code for the later use. Note! The PIN-code is a 4-character code and is case sensitive.
2. Connect the dNode P1 to the P1 port of the meter.



3. The gateway will start up and a blue LED inside will turn ON, and stay ON. wait for at least 10 seconds before continuing the installation from a computer, smart phone or tablet.



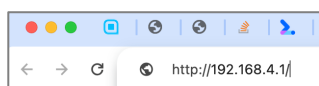
4. The gateway will broadcast a WiFi network with the name (SSID) "dNode P1". Connect to this network. Password is not required to connect.



5. A browser window will automatically appear after successfully connecting to the WiFi and it will automatically display the installation page of the dNode P1.



6. If no browser window appears, open a browser window and browse to the address <http://192.168.4.1/> - still connected to the “dNode P1” WiFi network.



Tip! In the page that now shows, you can click the button “Info” to see your device Serial Number if needed. This info is available later as well.

dNode P1	
Hostname	dnodp1
Serial number	2741287782
MAC Address	C8:C9:A3:64:BB:66

7. Return to the dNode P1 browser window (go back if you are visiting the Info-page) and click on the “Configure WiFi” button. Type in the name (SSID) of your home Wi-Fi network, then type your WiFi password connect to your Wi-Fi.

This page will disappear when trying to connect. An info page will show up. This will automatically close when the device is connected to your Wifi. If the device cannot connect it will automatically show the captive portal page again.

8. The dNode P1 will now connect to your WiFi and you can access it via your browser. Browse to its hostname: <http://dnodp1> , or via its IP-address (check this in your

network router). If the dongle can access and read the meter port, the blue LED will blink twice every 10 sec.

9. Browse to the IP-address, or hostname, to verify it is connected.
You should see a webpage with a link to its registration page, click on this link.
10. Type in your PIN-code and click "Save".
11. Your dNode P1 is now registered and ready to use!

3 Web User Interface

To access the web user interface on the dNode P1. No App is needed, just use your web browser and browse to it via its hostname (<http://dnodep1>) or via its IP-address (<http://x.x.x.x>).

When the user interface has been loaded in your browser, you will land directly on the start page.

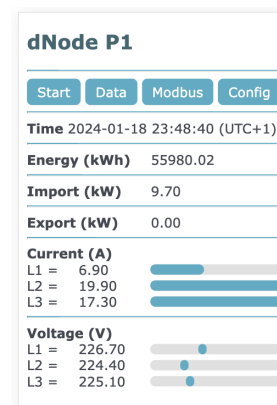
In the page header you'll see a menu. Each menu item is described below.



3.1 Start

Menu item “Start” takes you to the start page (<http://dnodep1>). Here you can see you're a meter time stamp, cumulative energy consumption (“Energy”), instantaneous active power import (“Import”), instantaneous active power export (“Export”), current values for Current and Voltage for each phase (L1, L2 and L3).

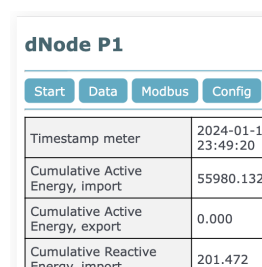
This data is automatically updated each 10 seconds from the meter and changes automatically in the web page without needing to refresh/reload the page.



3.2 Data

Clicking on menu item “Data” takes you to the detailed view of meter data. This is the complete set of data that is sent from the meter. Here you can also see additional data that is calculated by the device, such as apparent power and power factor (cos phi).

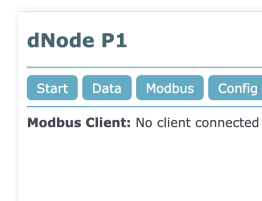
This page is not automatically refresh/reloaded.



dNode P1	
Start Data Modbus Config	
Timestamp meter	2024-01-11 23:49:20
Cumulative Active Energy, import	55980.132
Cumulative Active Energy, export	0.000
Cumulative Reactive Enerov. import	201.472

3.3 Modbus

In the Modbus page you can see the IP-address of the Modbus device (Modbus Client) that is connected to the dNode P1. If it is a KEBA P30 (or soon P40) EV-charger, it will also show the Serial Number of the KEBA EV-charger.



3.4 Config

In this page you can find the device info. Here you will see information about hardware version and firmware version. You will also see the dNode P1 MAC-address and IP-address.

In the Config page you can also update your device firmware if needed.

Firmware download is available for registered devices at <https://www.novion.se/dnodep1/downloads/>

3.5 Reset

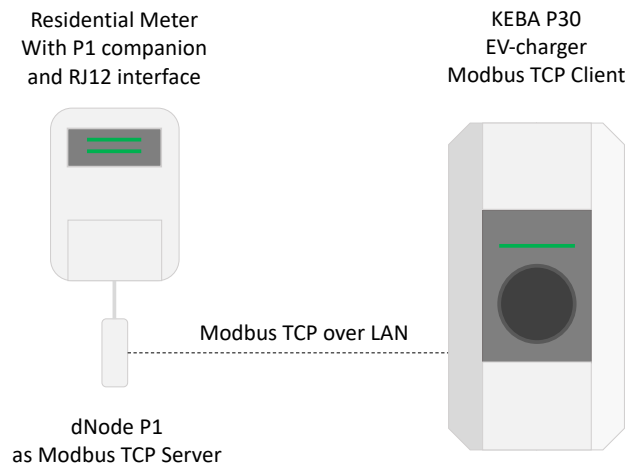
By clicking on Reset (under Config) you will reset your device. This means it will forget WiFi settings and PIN-code. This is useful if you for example want to connect to a different WiFi.



Note! If the configured WiFi is inaccessible, the device will automatically revert to be a WiFi access point. However, when the configured WiFi is accessible again the dNode P1 will automatically connect.

4 Connecting with your KEBA EV-charger

The dNode P1 is out-of-the box compatible with the KEBA EV-charger (P30). To connect the device to the KEBA EV-charger you need to log into the EV-charger Admin Web Interface and add an external meter. Please consult your KEBA documentation for more information.



To connect you will need the IP-address of the dNode P1. The dNode P1 uses port 502 for this Modbus integration (this is registered in the KEBA EV-charger).

5 Modbus

dNode P1 provides all HAN/P1-port available data, as well as additional device info, via Modbus TCP.

To connect to dNode P1 via Modbus use its hostname or IP-address and connection to TCP-port 502 (which is the default Modbus TCP port). Unit is always 1.

For more information of the dNode P1 Modbus please consult additional documentation at <https://www.novion.se/dnodep1/downloads/>

- dNodeP1 SE-Kxxx Modbus Programmers Guide.pdf

6 Technical Specification

Input interface	Meter P1 interface
Power Consumption	Max 250 mA@5 V, min 150mA @5 V (P1)
Operating Temperature	-30 to +50 degrees C
IP Class	IP 20
Size (L x W x H), mm	73 x 28 x 23mm
Weight	22g
Frequency band	2402 MHz to 2482 MHz
Max RF output power	+20 dBm (100mW)
Cable	RJ12-RJ12 max 1m
Warranty	2 years

7 Support

Please contact your reseller for product support.

Documentation is found at <https://www.novion.se/dnodep1>

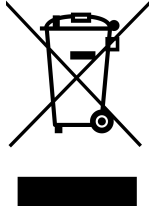
8 Warranty

Novion Technologies AB issues a limited non transferrable warranty to the end-user of this product via resellers. This limited warranty is not transferable. The warranty applies to manufacturing faults and material defects for 2 years from the date of purchase. The customer must return the product together with the proof of purchase referring to the date of purchase.

All warranty claims are managed by the reseller of this product. The warranty is void if the product has been opened, handled carelessly, altered, or repaired by anyone other than Novion or its authorized representatives.

Novion makes no warranty other than this limited warranty and is not liable for any other costs other than those mentioned above, wether direct or indirect costs or consequential damages. Moreover, Novion is not obligated to any other warranty other than this warranty.

9 Disposal of the device



Products marked with a crossed-out wheeled bin symbol and a single black bar underneath, contain parts that must be handled in compliance with the WEEE Directive (2012/19/EU). The appliance may therefore only be collected and taken back separately from unsorted municipal waste, i.e. it must not be disposed of with household waste. The appliance can, for example, be taken to a municipal collection point or, where applicable, to a distributor.

This also applies to all components, sub assemblies, and consumables of the old appliance to be disposed of.

Before the old appliance can be disposed of, all old batteries and accumulators that are not enclosed in the old appliance must be separated from the old appliance. The same applies to lamps that can be removed from the old appliance without being destroyed. The end user is also responsible for deleting personal data from the old appliance.

10 EU declaration of conformity

Hereby, Novion Technologies AB, declares that the radio equipment type, dNode P1 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following Internet address: <https://www.novion.se/quality/doc/>

