Plugwise

Getting started with Plugwise

Installation manual

200.100.100530W

Thank you for purchasing this Plugwise kit; the most advanced system for monitoring and control of your energy consumption available today. The system is managed by Plugwise Source, a software application that communicates with the Circles (the smart plugs) via a ZigBee wireless network.

The installation process consists of three steps: plugging in the Circles, installing Source and configuring the system. A detailed manual for Source will be shown if you click the application's question mark button.

Installing and configuring your kit can take approximately 45 to 90 minutes.

Contents of the package

Check the content of your package for the following parts. If a part is missing, please contact us as soon as possible.

1x Stick

1x Circle+
white with grey back

Circle
white

licence code

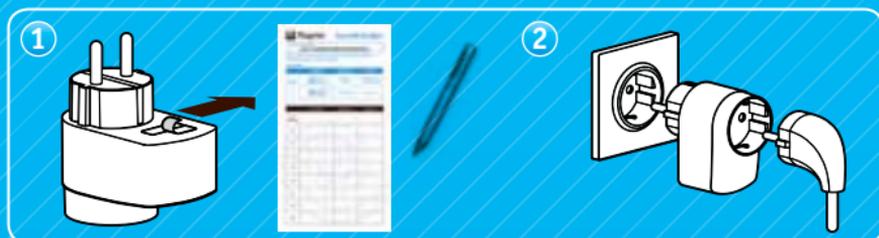**Installation list with software licence code**

This manual

System requirements

In order to install Source you need a computer with at least the following specifications:

Windows XP/Vista/7	1 GHz processor
30 MB free disk space	64 MB graphics card
1 GB memory	Internet connection

1. Placing the Circles

Circle+

The Circle+ is the coordinator of the Plugwise network. This feature only plays a role while installing the network and when new modules are added. The Circle+ also contains a clock that the other Circles use to synchronize their time stamps. The Circle+ should always be installed first and should always be plugged in within range (5-10 m) of the rest of the Plugwise network, even when no appliance is connected.

› Take the Circle+ (recognizable by its grey back), the included installation list and a pen.

› Choose an appliance, located in the same room as the computer, to plug into the Circle+.

› Carefully tear off the lower code label and stick it in the space on the installation list. It is possible that the codes have already been printed on the installation list.

› Write the name of the appliance connected to the Circle+ next to the code on the installation list, as well as the location of the appliance.

› Put the Circle+ into the power socket and plug the appliance into the Circle+.

Circle(s)

› Repeat the above procedure for the other Circle(s).

› If Circles are placed close to each other, the Plugwise network will operate faster. Although Circles can bridge longer distances, it is recommended that the Circles are placed no more than 5-10 m away from each other.

› Return to your computer when all Circles are connected and the installation list is complete.

It is not necessary to install all Circles at once as they can be added later via the settings menu. This is further explained in the Source manual.

Some examples of heavy energy users are: refrigerators, water heaters, ovens and water beds. Most people can save energy on lighting, digital TV tuners, internet routers and devices with a stand-by feature.

If you want to connect multiple appliances to one Circle, please take the inrush current of each appliance into account. The inrush current can be many times the nominal use current of the appliance.

2. Installing Plugwise Source

Plugwise Source is the software application that enables you to view energy usage data on your computer. It's also used to create schedules to automatically switch appliances on and off, so you can easily save on energy costs. Before you install Source, make sure you have completed the previous steps of this manual.

‣ Go to www.myplugwise.com and download the installation file. If you use Internet Explorer, click 'Run' if you are asked whether you want to run or save the file.

‣ Double click the installer file once it has been downloaded. A software wizard will guide you through the installation process.

‣ When Source has been installed, the Plugwise network configuration wizard will be shown.

Stick

‣ Plug the Stick into a USB socket on your computer after Source has been installed.
When a Windows dialogue box appears with the title 'unknown manufacturer', click 'allow' to continue your installation.

3. Configuring the Plugwise network

After the installation of Source has been completed, the configuration wizard starts up automatically. You can start the configuration wizard manually with the shortcut in your Windows menu 'Start'.

‣ The wizard will guide you through a number of screens to enter data in order to set up your network. The Source software manual offers support for every step taken by the configuration wizard. The manual appears if you click the question mark button at the bottom right of the window.

‣ At the end of the configuration procedure, you will receive an e-mail. After clicking the activation link in that e-mail, Source and your Plugwise network are ready for use!

‣ Keep the installation list with the licence code in a safe place for future use.

It can take up to 10 minutes for all the Circles to be registered by the network.

If a Circle is not found by the network during the configuration, you can add it manually via the settings menu. This process is explained in the Source software manual that appears if you click the question mark button at the bottom right of the Source window.

4. Use tips

With Plugwise Source you can measure the energy consumption of each of your appliances and switch the appliances on and off. By sending switching schedules to the Circles you can automatically switch appliances on and off and save on your electricity bill. Your computer can be turned off as energy measurement data and schedules are saved on the Circle's internal memory.

Make switching schedules to switch appliances on and off automatically.

1. Reports displays graphs of your energy use, costs and related CO_2 emission. A report is generated after receiving one hour of data and is then updated hourly.

2. Schedules is used to define automatic switching schedules.

3. Direct Switching switches appliances on and off manually.

4. Stick flashes if data is sent or received. Only remove the Stick from your computer when Source is closed.

5. Range of data shown by the graph.

6. Help shows a detailed manual for Source.

7. Settings shows a menu to make changes to anything defined during the configuration. You can also add appliances and create groups there.

If you remove a Circle from the power socket and put it back in again, it will always switch to 'on', regardless of any switching schedule that is assigned to it. This can come in handy if you want to use an appliance that has been switched off automatically by a schedule.

5. Transfer of consumption data

By accepting the Plugwise licence terms (available at www.plugwise.com) you are allowing the automatic transmission of the measurement data of your appliances to Plugwise. The data will be sent anonymously (unless you indicate otherwise) and are not linked to your location or ID in any way.

These technical consumption data are used by Plugwise to improve and extend the functionality of its products with the ultimate goal of a better environment and a sustainable world.

6. Safety information

Save these instructions for future reference.

Electricity and safety

• Install and use the products only in the manner as described in the user-documentation.

• The maximum allowed electrical current through a Circle is 16 A.

• Do not use the products if they are damaged or malfunctioning.

• Never connect electrical appliances to a Circle/Circle+, if the appliance or the cord shows any signs of damage.

• Do not let the products come into contact with water or other liquids.

• Never open up the casing of the product. The products do not contain components that you can service or repair.

• The Plugwise Circles have been tested by the KEMA institute and have been granted the KEMA Keur safety certificate (number 211754).

Safety and interference with electronic equipment

Plugwise products comply with all regulations, requirements and guidelines to ensure safety and avoid interference with other equipment. This has been independently tested by KEMA Quality and TüV Rheinland. The strict German DIN VDE standards also apply to Plugwise products.

The Circle and Circle+ are certified to the following standards:

IEC 60884-1:2002 + A1:2006, IEC 60884-2-5:1955, NEN 1020:1987 + A2:2004, DIN VDE 0620-1:2005 + A1:2009 (Draft), EN 60730-1:2000 + A12:2003 + A13:2004 + A1:2004 + A14:2005 + A16:2007 + C11:2007 + A2:2008.

Environment

Old electrical and electronic appliances often contain valuable materials. Never discard appliances with household waste; please recycle them at your local facility.

7. Support

A detailed manual for Plugwise Source can be viewed by clicking the 'Help' button at the bottom right corner of the window. Additionally, for answers to frequently asked questions please visit:

www.plugwise.com/en/support/faq

In case you have any questions which are still unanswered by the FAQ, or in case you require support or service, please send an e-mail or call our service number. We also welcome any feedback on our products.

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phone: Ž' - ˙$%$* - +(' - &

8. Technical data

Circle

Parameters	Min.	Nominal	Max.	Unit	Remarks
Power supply					
Supply voltage	85	230	240	VAC	
Frequency		50 / 60		Hz	
Power dissipation	0,3	0,55	1,1	W	230 VAC, 50 Hz, 25°C, unloaded
Output					
Output current			16	A	cos phi 1, max. inrush current: 80 A during 10 ms.
Switching cycles (23 °C, 35-85% RH)		10 000		Cycli	Max. 16 A, cos phi 1
Switching cycles (23 °C, 35-85% RH)		6050		Cycli	Switching on: 30 A, Switching off: 3 A, cos phi 0,3
Energy measurements					
Accuracy (current usage)		5% ± 0,5 W			230V AC, 50 Hz, 23°C, range: 1,035-3680W
Accuracy (cumulative)		1% ± 0,2 W			1 hour cumulative data
Permanent memory					
Storage capacity		512		kByte	
ZigBee communication					
Baudrate			250	kbps	O-QPSK
Frequency	2400		2483,5	MHz	16 channels of the 2,4 GHz ISM band
Bandwidth		2,0		MHz	5 MHz channel spacing
Receiving sensitivity (signal/noise ratio)	-92	-97	-98	dBm	1% PER (20 byte packet)
Transmission power	-32	3	5	dBm	

Circle+

In addition to the specifications of the Circle, the Circle+ features a built-in clock.

Parameter	Min.	Max.	Unit
Clock operating time without power supply	6	9	Days

Stick

Parameters	Min.	Nominal/type	Max.	Unit	Remarks
Power supply					
Supply voltage		5		Vdc	Powered by USB host
Dissipated power		0.375		W	
Connector		USB (A)			
Frequency	2400		2483.5	MHz	16 channels of the 2,4 GHz ISM band

Usage and storage temperatures for Circle, Circle+ and Stick

Environmental conditions	Min.	Max.
Temperature (operational)	0 °C	60 °C
Humidity (operational, non-condensing)	0 % RH	95 % RH
Temperature (storage)	-20 °C	70 °C
Humidity (operational, non-condensing)	0 % RH	95 % RH