USER MANUAL

PingBrother® EPIW104

managed passive poe switch & IP watchdog

CONTENT

Capter 1

1.1 Preface

PingBrother is a passivePOE switch (PSE), that can work on nearly any low voltage (8-56V DC or 9-42V AC), and can distribute its input power to any kind of connected standard or non standard POE devices (PD).

The POE output power can be fully managed either manually, remotely over the network, or by its own built-in control system which works as an IP watchdog. About the events and responses email notification canmake.

It's a great cost-effective multifunctional tool for unattended functioning network devices such as IP cameras, Wifi radios, VOIP devices, switches especially those which have a POE support. By manually deactivating the POE function, PingBrother can control any connected non POE device by its relay contact outlets.

1.2 CE MARK WARNING

This is a Class-A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

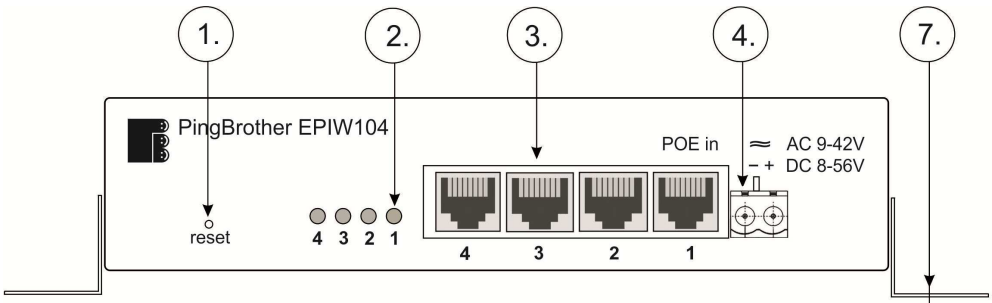
1.3 FCC WARNING

ThisEquipment has been tested and foundtocomplywiththelimitsfor a Class-Adigitaldevice, pursuantto Part 15 of the FCC rules. Theselimitsaredesignedtoprovidereasonableprotectionagainstharmfulinterferencein a residentialinstallation. Thisequipmentgeneratesuses and canradiateradiofrequencyenergy and, ifnotinstalled and usedinaccordancewiththeinstructions, maycauseharmfulinterferencetoradiocommunications. However, thereis no guaranteethatinterferencewillnotoccurin a particularinstallation. Ifthisequipmentdoescauseharmfulinterferencetoradioortelevision reception, whichcan be determinedbyturningtheequipmentoff and on, theuser is encouragedtotrytocorrecttheinterferencebyoneor more of thefollowingmeasures:

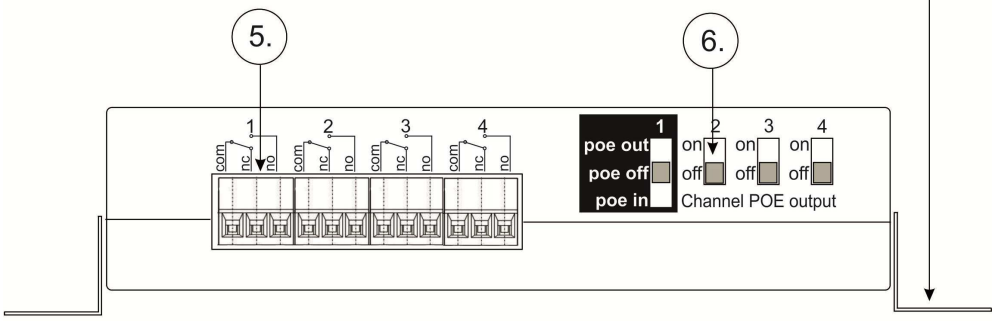
- Reorientorrelocatethereceiving antenna.
- Increasetheseparationbetweentheequipment and receiver.
- Connecttheequipmentinto an outleton a circuitdifferentfromthattowhichthereceiver is connected.
- Consultthedealeror an experiencedradio/TV technicianforhelp.

Capter2

2.1 Physical description



Front view



Rear view

Figure 1

1. Reset button
2. Indicator LEDs
3. Ethernet connectors
4. Terminal block power connector
5. Relay contact outlets
6. POE power selector slide switch
7. Mounting tabs for hanging installation

2.2 Channel states and configuration

	State of channels	
	1. (default)	2.
Channel description in the web based GUI of the device	on	off
State of relays 1-4	not energized	energized
POE power out on eth 1-4	on	off
LED indicators 1-4	on	off
“no”outlet of terminal blocks 1-4	open	closed
“nc” outlet of terminal blocks 1-4	closed	open

Table 1

2.3 Power input assignment

There are two different options to power the device

- Passive POE input on Ethernet port 1
  (for pin allocation see Table2 on page 6)
- External power Input through the Terminal Block connector

In both cases the power input can be:

- 9-42V AC or
- 8-56V DC

Please note, in case of a reverse DC power input the device functions properly, but the outgoing POE power pin-out will be also reversed compared with the default (See Table2 on page 6)

2.4 Ethernet ports

4 pieces RJ45 Fast Ethernet 100Base-TX port with passive PoE extension

RJ45 Pin	Color	Function	RJ45 pin for Straight cable (MDI, EIA/TIA568A)	RJ45 pin for Crossover cable (MDI, EIA/TIA568A)
1	Green	Data TX +	1	3
2	Green/White	Data TX -	2	6
3	Orange	Data RX +	3	1
4	Blue	POE power +	4	4
5	Blue/White	POE power +	5	5
6	Orange/White	Data RX -	6	2
7	Brown	POE power -	7	7
8	Brown/White	POE power -	8	8

Table 2

2.5 POE power selector slide switches

The POE power selector slide switches (Figure1 / 6) allow full flexibility of the device.By using them can be selectedthat the unit gets the input power eithervia the terminal block power connector, or aPOE input. It's also selectable if the POE power on the Ethernet ports should appear or not.

Setting examples table

SW 1	SW 2-4	TB Power connector	Description
poe out	on	power in	Power injector (Figure 2 on page 7.)
poe in	on	not used	Power distributor (Figure 3 on page 7.)
poe in	off	power out	POE separator function (Figure 3 on page 7)
poe off	off	power in	Using with non POE device

Please note, if the powering comes via Terminal Block connector, but the SW1 is on "POE in" state, the POE power appears on the eth1 port.

2.6 Application example figures

Figure 2

Figure 3

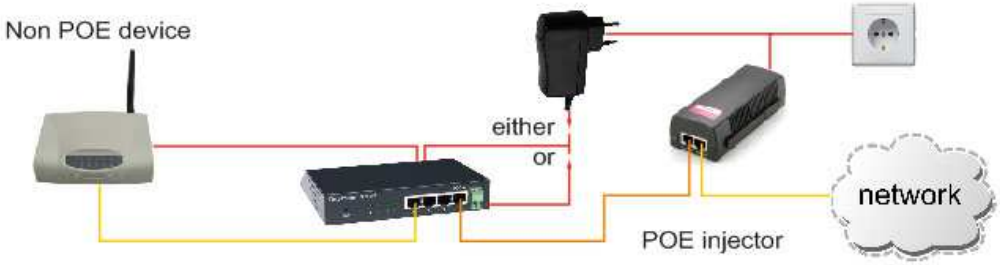


Figure 4

Capter3

Software configuration.

3.1 WEB based management

The PingBrother can be configured locally or remotely via any web browser.

- Default IP address: 192.168.1.234
- Default username: admin
- Default password: admin

3.1.1 Status screen

On the status screen you can check the current software and hardware version, input voltage, device internal temperature, uptime, and the states of channels. (In case of an AC input the voltage measurement not work properly by Firmware 1.0. This will be fixed in a later firmware version.)

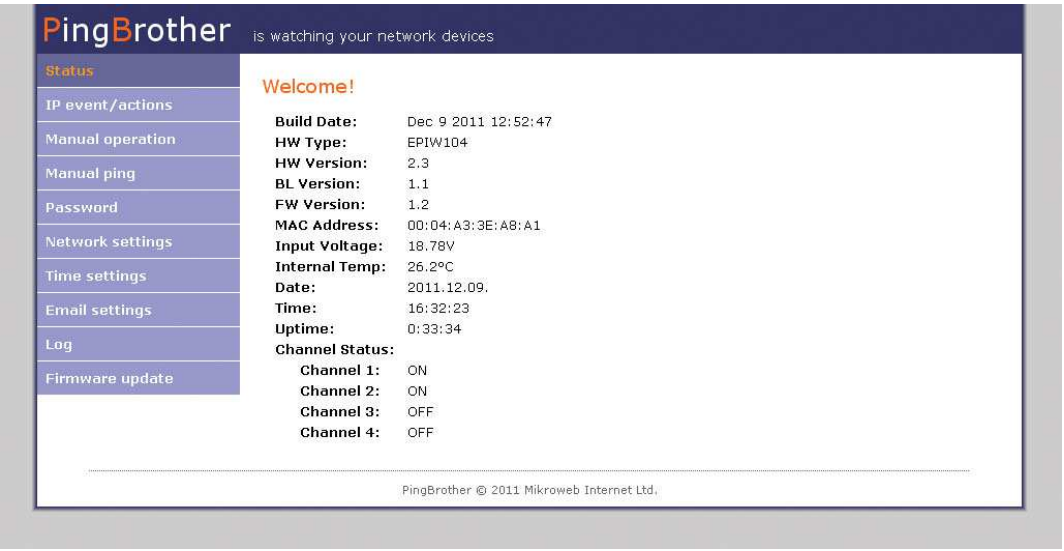
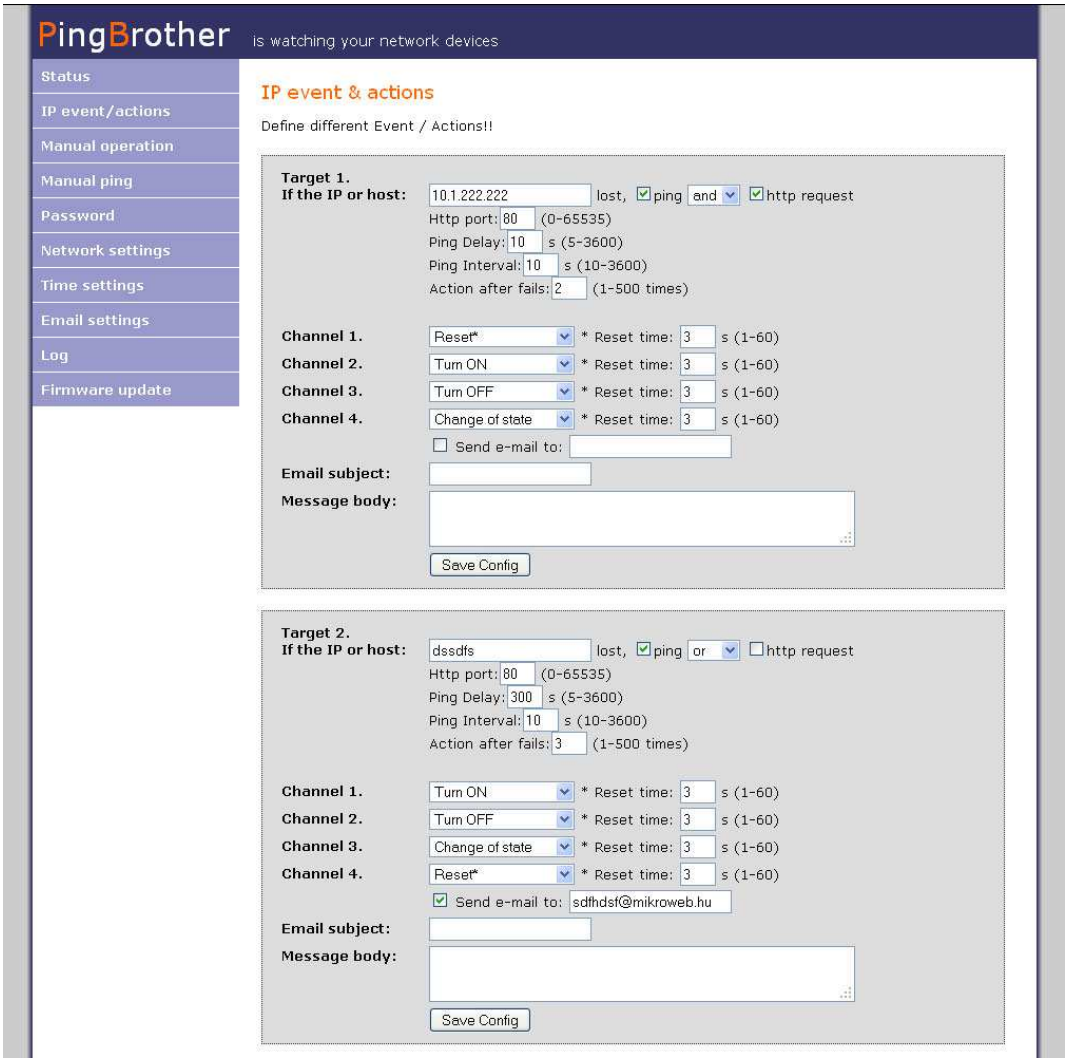


Figure 5

3.1.2 IP event & actions configuration

In this menu you can manage the IP watchdog functions.



Parameter specifications:

- Watched host: can be an IP address or domain name
- HTTP port of the watched host (0-65535, default 80)
- Ping delay: minimum time between two actions (5-3600, default 300 sec)

Please note, that the ping delay must be most definitely longer, than the boot time of the watched device otherwisean infinite loop can come up.

- Ping interval: the time between two icmp or http request
- Action after fails: number of the lost icmp or http replay to activate the specified action
- Email address: mailing address for notification
- Email subject of the notification
- Message body of the notification

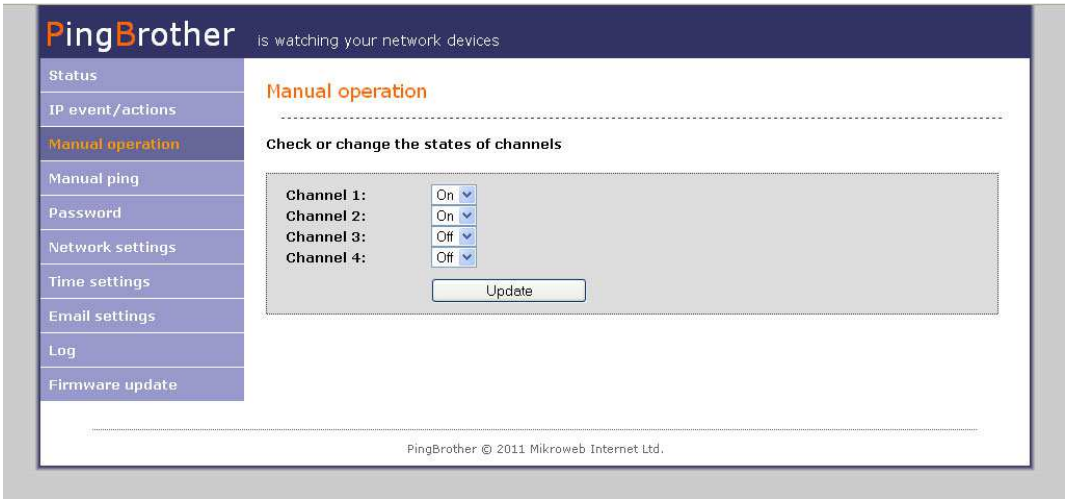
Action specifications:

On all channelsthe following actions can be set up:

- Do not do anything
- Turn ON
- Turn OFF
- Change of state
- Reset (changing the state of the channels for a specified reset time)
- Reset time (1-60, default 3 sec)

3.1.3 Manual operation

Manually switching the states of the channels via a web browser



Please note, if simultaneously more commands come from a manual operation or from the automated IP/Event menu always the last command will be performed.

It is possible to switch the channels remotely by pure http commands.
With this option the outputs can be managed by any 3rd party programs remotely.
The username and password should be sent by base64 coding.

Examples:

All channel turn off:

http://PingBrothers_IP_or_hostname/protect/PBmanual.htm?Relay1=0&Relay2=0&Relay3=0&Relay4=0

All channels turn on:

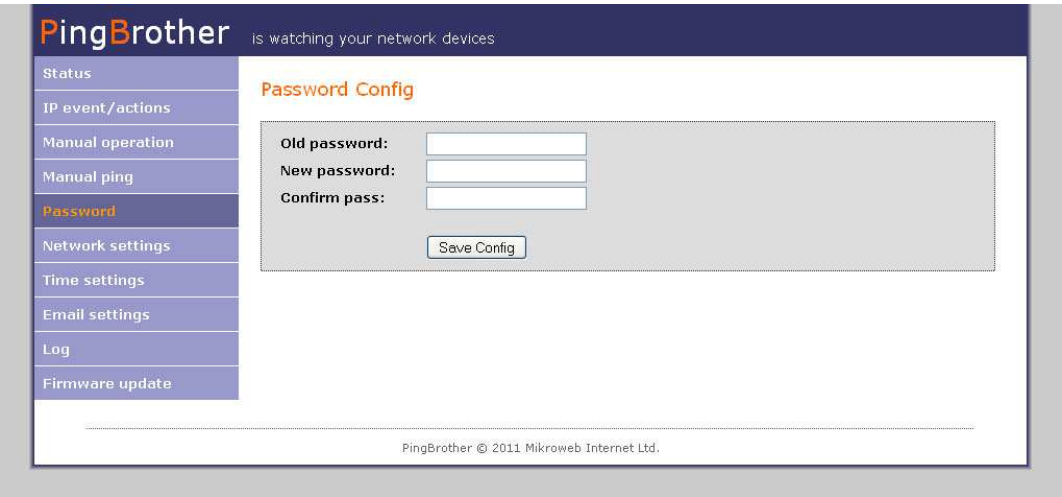
http://PingBrothers_IP_or_hostname/protect/PBmanual.htm?Relay1=1&Relay2=1&Relay3=1&Relay4=1

3.1.4 Manual ping

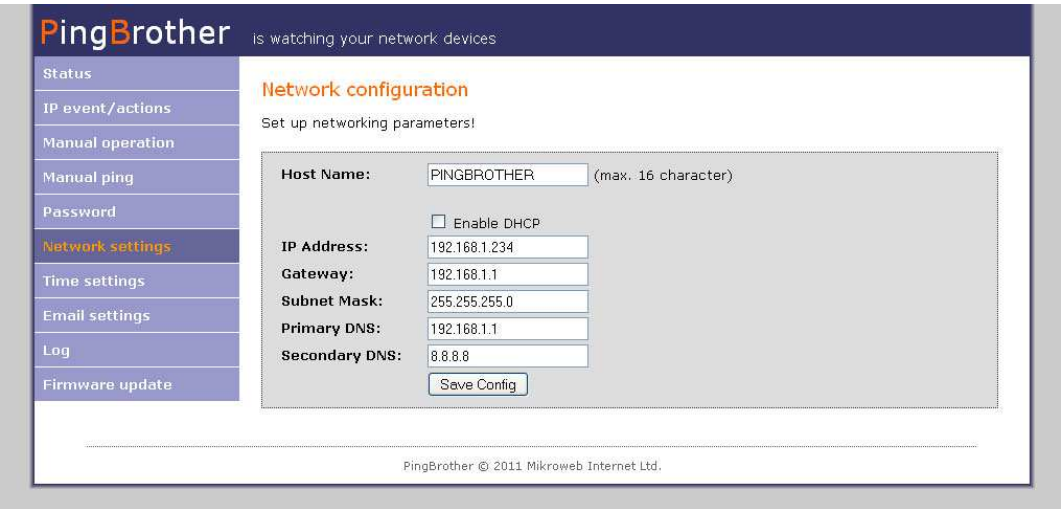
For checking ping availability and response time an IP or host from PingBrother

3.1.5 Passwordconfig

For changing of the administrator password



3.1.6 Network configuration



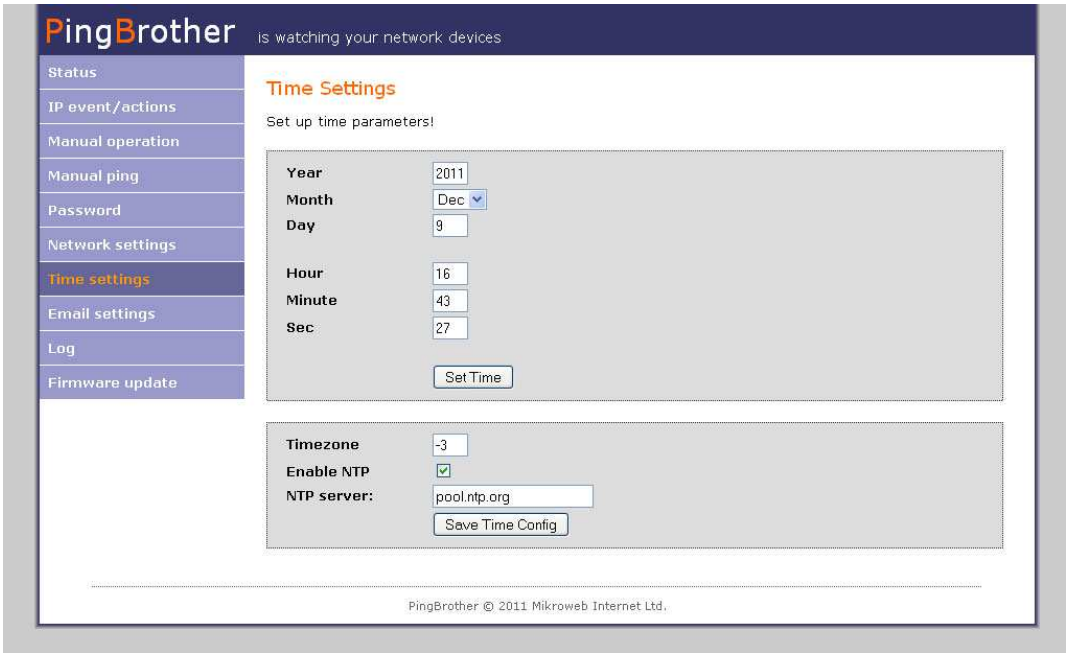
Parameter specifications:

- Host name
- Enable / disable DHCP client
- IP address (IPV4)
- Gateway
- Subnet mask
- Primary DNS
- Secondary DNS

In case of the enabled DHCP client in this menu can be seen by the server allocated IP address of the device

3.1.7 Time settings

There are parameters to set PingBrothers clock



Parameter specifications:

- Manual settings:
  - Year
  - Month
  - Day
  - Hour
  - Minute
  - Sec

- Automatic NTP server synchronization:
  - Time zone: the difference between your local time and GMT
  - Enable NTP: if you select the manual settings will be overwritten automatically by the NTP server
  - NTP server: the url or IP address of your NTP server

3.1.8 Email configuration

There are parameters for sending a notification email

If your SMTP server has no password authentication leave empty the User Name and Password boxes. SSL authentication is not available at the moment.

3.1.9 System log

PingBrother is capable of logging various system events and action information. Logs can be saved in devices memory (RAM).

Log entry is made about:

- ICMP ping fail
- HTTP check fail
- Manually switching the states of the channels
- Automatic responses of the IP event / actions menu
    - Channel reset
    - Channel on
    - Channel off
    - Changes the position of the channels
    - Notification emails

3.1.10 Firmware update

Browse and upload a firmware

You can use only original hardware version specific firmware. Please be patient, the firmware update process may take up to 5 minutes. During the update 1-2 min the network switch function is also out of service.

After the firmware update the Event / Action and all other user defined settings such as password, IP address, etc. will remain. If this would be later differently, the firmware description will be included warning about it.

3.2 Reset the device

It is possible to reset all settings to the default, for example in case of a lost password. The recovery steps are the following:

- Power OFF
- Press the reset button (Figure 1/1)
- Power ON
- Hold the reset button until all the four indicator LED are on (6-8 sec)
- Release the reset button

After the reset the device IP address will be restored also to the default:

192.168.1.234

3.3 Co-use with a standard 802.3af POE PD-s

PingBrother can powers a standard IEEE 802.3af-2003 POE devices, and works properly together with themof the following conditions:

- The powered device (PD) 802.3af Mode B(midspan) compatible
- A 48V DC power supply is used to supply of the PingBrother
- The power of the PS is scaled according to the type and number of the powered devices

Always recommended to perform testing before usage.

Capter4

4.1 Technical specifications

Model	EPIW104
Input operating voltage (via connector or POE)	8-56V DC or 9-42V AC
POE output voltage on all ethernet port	8-56V DC or 9-42V AC
Total Power Budget	60W
Max. self Power Consumption of the device	8W
Max. Power Consumption on each eth. port	15W
Number of 10/100 POE capable eth port	4
Max switching Voltage on terminal blocks	220V DC, 250V AC
Max. switching Power on terminal blocks	30W / 230V
Max switching current on terminal blocks	2 A
3-pol terminal block of Change-over relay	4
POE operating mode selection slide switch	4
Plug-in2-pin terminal block power connector	1
Led indicators	4x3
Case material	steel
Safety	CE/EN60950
Operating Temperature	-30 to +80 C
Operating Humidity	5 to 95% Condensing
Shock and Vibration	IEC60068-2-27, IEC60068-2-6
Dimensions	149 x 81 x 35 mm
Product weight	450 g
Services, events, actions	
Web based GUI	yes
IP address	IPV4 static or dhcp
Protocolls	TCP/IP, HTTP, SNMP, ICMP, IGMP
Specifications	IEEE802.3, IEEE802.3u, IEEE802.3x
Packet features	2k MAC address, 384kbit packket buffer memory, max. packet lenght: 1552/1536 bytes
Watched IP address about loss of ping or http	4
Internal and external watchdog	yes
Action: POE on/off	yes
Scheduled POE management	yes
Action: relay toggle	yes
Action: email sending	yes
Input voltage measurement	yes
Actions due to change of input voltage	no
4 port POE current measurement	no
Actions due to change of current or power	no
Internal temperature measurement	yes
External temperature measurement	no
Actions due to change of temperature	no