

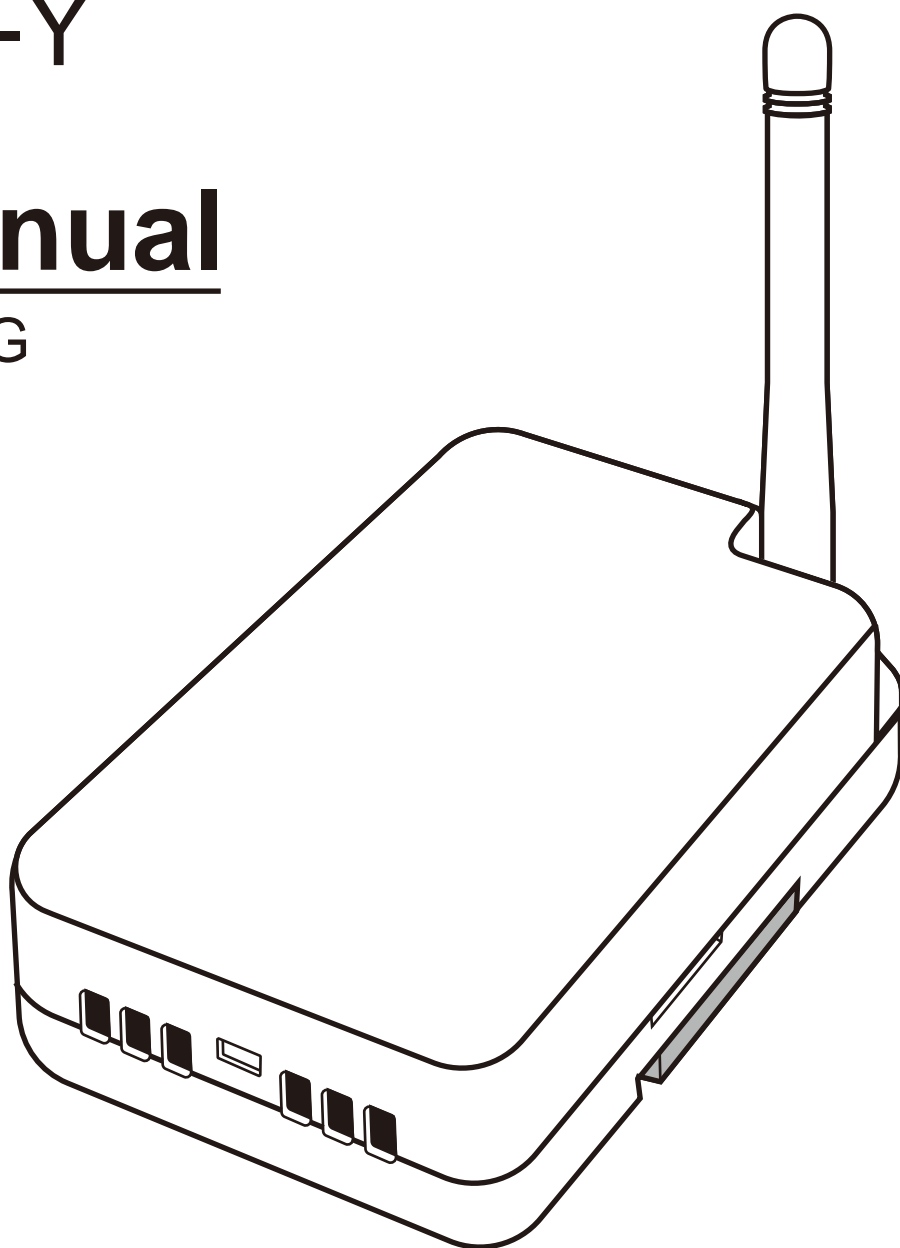


YOYOPower 4G Relay[®]

ER4-001-Y

User Manual

Version 1.4 ENG



Product information and support:



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YOYOPower 4G Relay

Control of high- and low-voltage circuits remotely, automatically or with sensors.

YOYOPower 4G Relay (ER4) is designed in a box format. It can be mounted on a wall or on a DIN rail in an electrical cabinet. It has screw terminals for connecting two electrical circuits (either 5-24V or 110-230V) and a wired sensor (NO/NC type) as well as a socket for a temperature sensor on cable (included).

ER4 is powered by 12V DC either from the included power adaptor or from other 12V source e.g. a car battery or a solar panel. In case the 12V power source fails or deviates from a preset level, the event is notified by SMS.

Like other YOYOPower models, power ON and OFF can be controlled at any time, from your mobile phone (by SMS or app) and/or automatically by preset schedule, thermostat, or delay. With ER4, electrical circuits can also be controlled (Power ON or OFF) with a wired sensor (of the NO/NC type, e.g. a motion detector or button). Power can also be turned ON for short duration by phone calls from up to 200 registered phone numbers, which is useful to open doors and gates in residential buildings, garages etc.

This model and all other existing and upcoming YOYOPower models are supported by the YOYOPower SMS 2.0 mobile app which is available for download from Google Play and the App Store.

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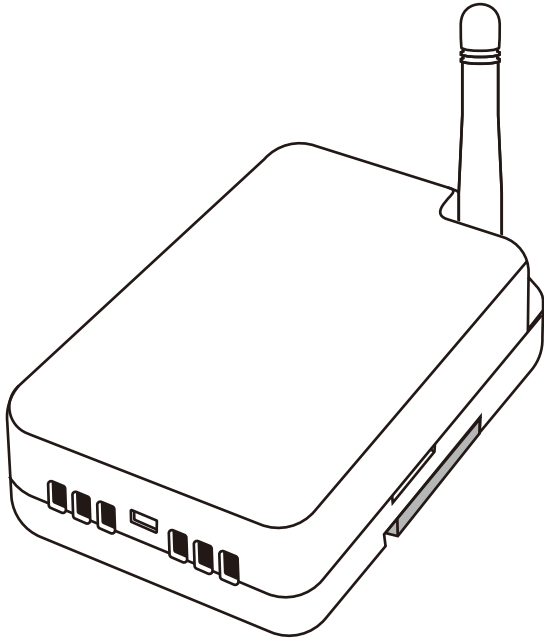
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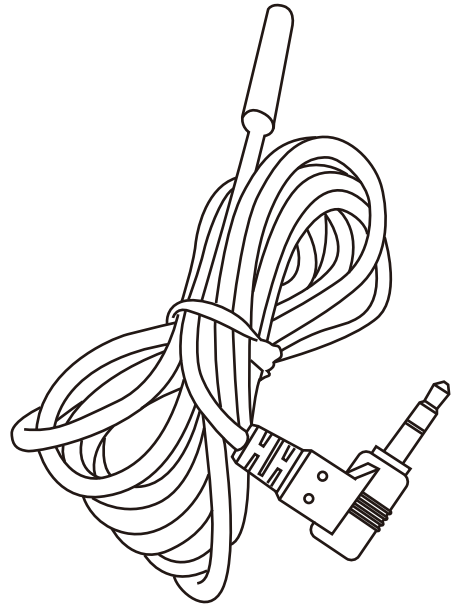
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1 Get to know YOYOPower 4G Relay

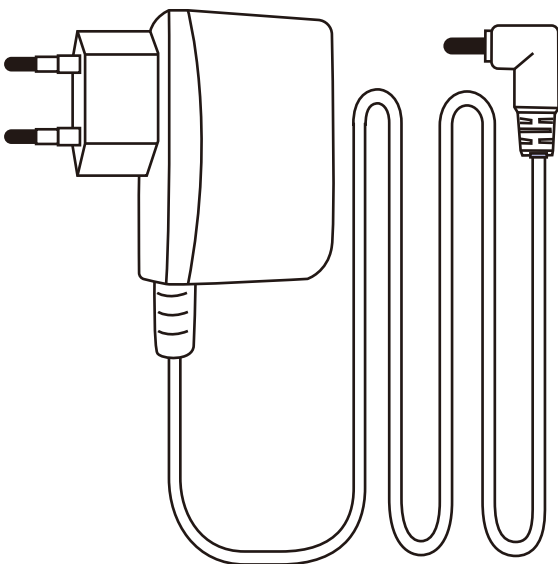
1.1 Kit content



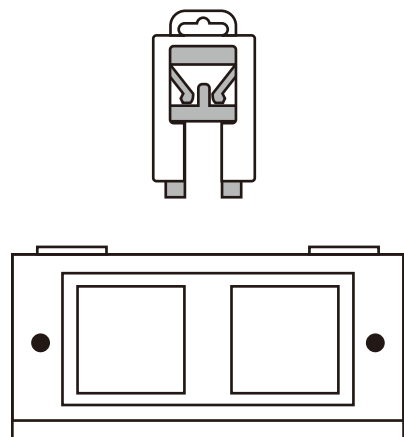
4G Relaybox



Temperature sensor



Power adaptor



Mounting plate

Figure 1.1

1.2 Status indicators

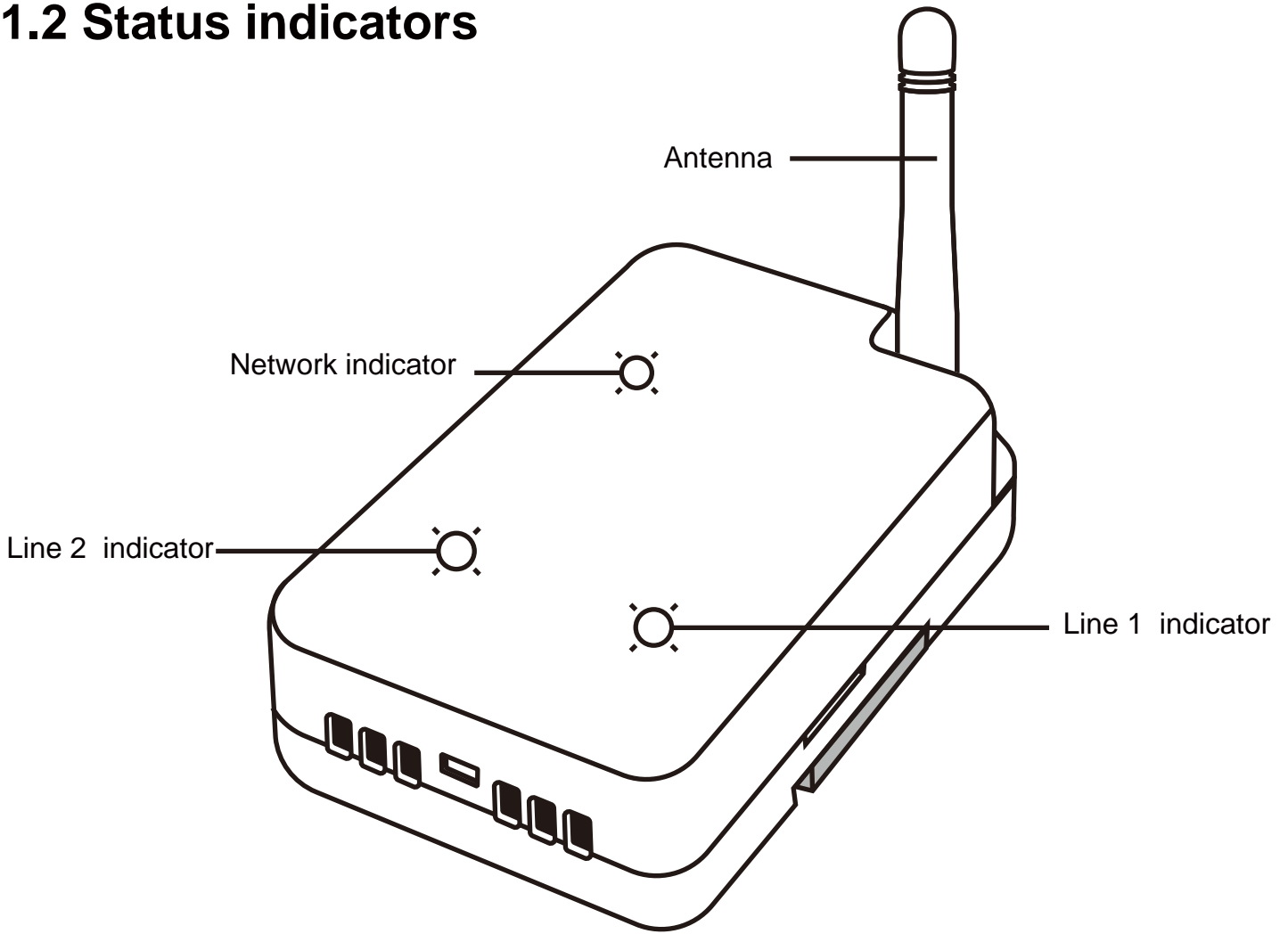


Figure 1.2

LED indicator	Behaviour	Status
Network	Slow transitions	Connected to mobile network and in standby
	Slow flash (once/sec)	Searching for mobile network
	Fast flash (twice/sec)	- SIM card error - Network connection failed - Processing...
Line 1 and 2	Permanently ON	Power is ON (COM and NO are connected)
	Permanently OFF	Power is OFF (COM and NC are connected)

1.3 Ports

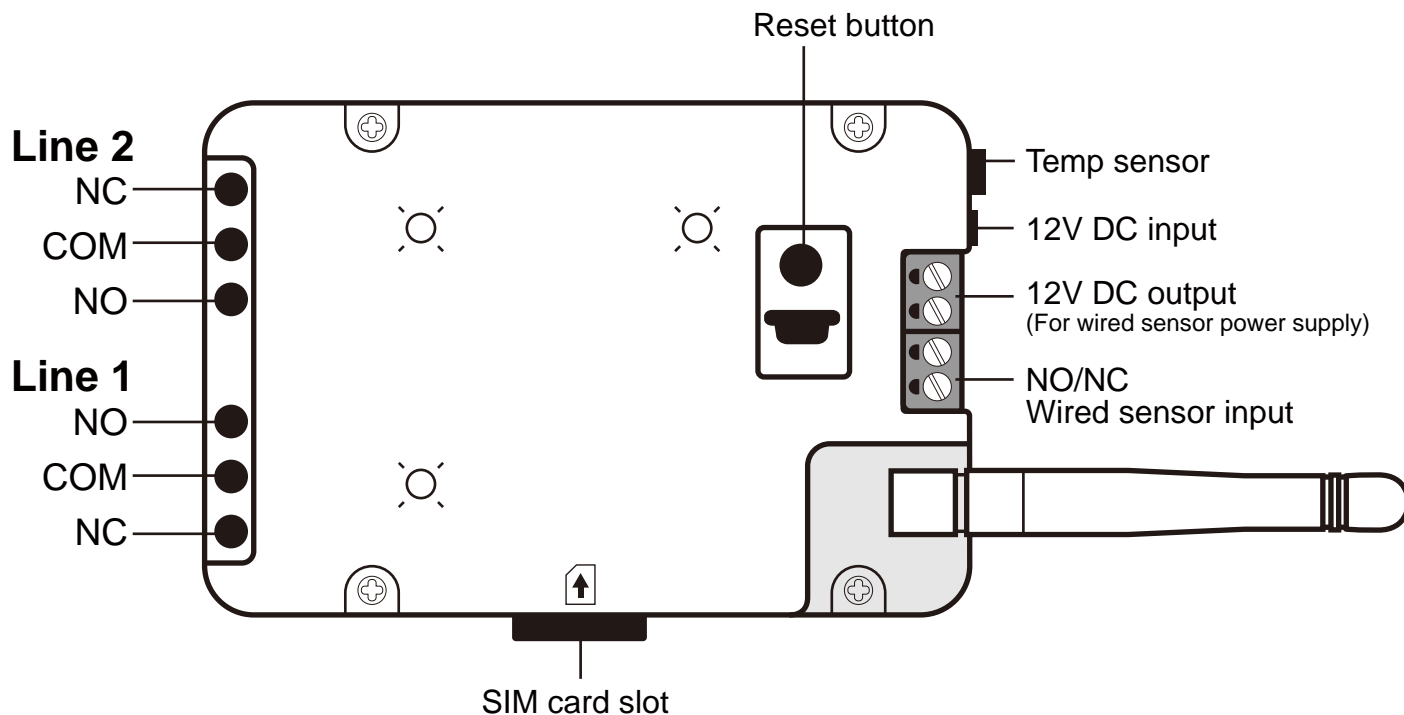


Figure 1.3: connectors and ports (cover removed)

1.3.1 Ports for control of electrical circuits

YOYOPower 4G Relay can support and control two electrical circuits. By default, these are named “Line 1” and “Line 2”. Each line has three screw terminal ports. The terminal in the middle is referred to as “Common” (COM) while the other two are referred to as “Normally Open” (NO) and “Normally Closed” (NC).

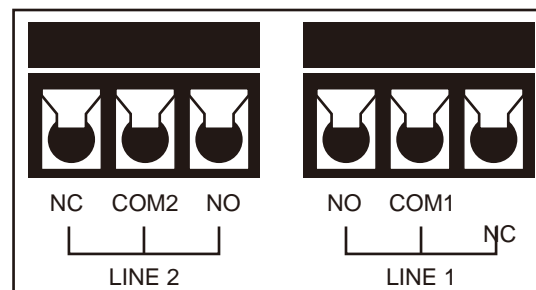


Figure 1.3.1

When YOYOPower switches to Power ON mode (e.g. by SMS command or sensor activation) then the COM terminal and the NO terminal “Close” (connect to each other), while the COM and NC terminals remain “Open” (not connected). In this case, current can pass through the “Closed” COM-NO circuit but not the “Open” COM-NC circuit.

When YOYOPower switches to Power OFF mode the COM and NC terminals “Close” (connect), while the COM and NO terminals remain “Open” (not connected). In this case, current can pass through the “Closed” COM-NC circuit but not the “Open” COM-NO circuit,

Note: With input voltage (5-24V or 230V) on the COM terminal and YOYOPower in Power ON mode, then the NO terminal receives output voltage. In Power OFF mode, the NC terminal receives output voltage.

Note: Current rating of Line 1 and Line 2 are max 16A each for resistive loads.

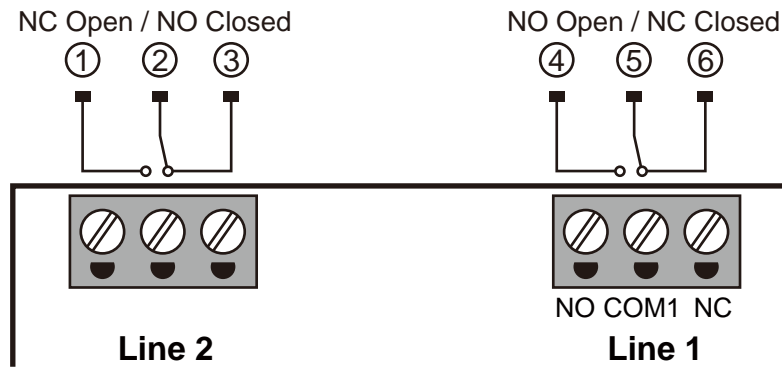


Figure 1.3.1: Line 1 is in NO mode (NO and COM are connected) and Line 2 is in NC mode (NC and COM are connected)

1.3.2 Ports for power supply and sensors

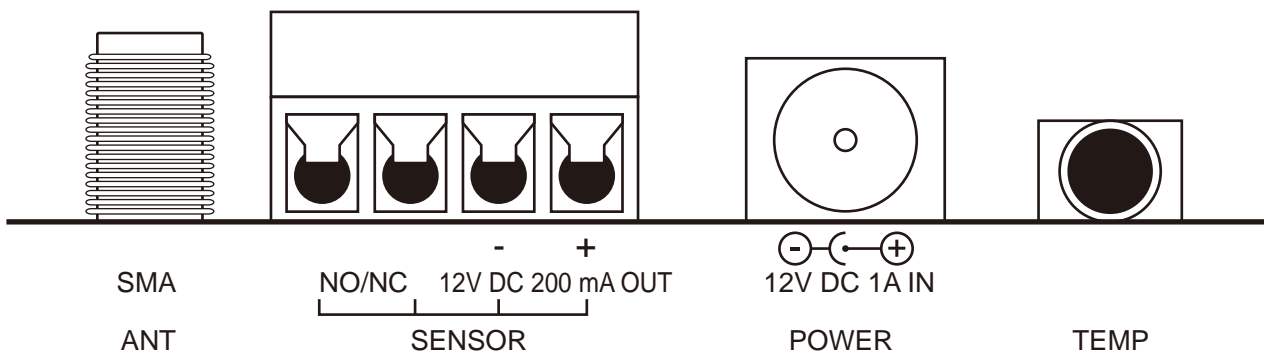


Figure 1.3.2

- ▶ **ANT**– Antenna with SMA-type socket. An articulated rod antenna is included.
- ▶ **SENSOR NO / NC** - screw terminals (marked “T1” and “T2” for optional wired NO / NC sensor (not included).
- ▶ **SENSOR 12V DC 200 mA OUT** - screw terminals (marked “-“ and “+”) optional power supply for a connected wired sensor (not included).
- ▶ **12V DC 1A IN** - socket for barrel plug (+ in the middle) for power supply of the device. A 230V AC-12V DC power adaptor is included in the kit.
- ▶ **TEMP** - 3.5 mm socket (audio jack type) for temperature sensor. A temperature sensor on cable is included in the kit.

2 Prepare YOYOPower

2.1 Install the SIM-card

1. Hold the SIM card with the golden contacts facing downwards
2. Insert the SIM card gently with the short end that has a cut corner first, until you feel a spring pressing back.
3. Push the SIM card a little further until the SIM locks into place with a click.

Note:

- ▶ Use only SIM cards in standard format Mini.
- ▶ Never insert a Micro or Nano sized SIM.
- ▶ Make sure the SIM's PIN-code lock is disabled.
- ▶ SMS service is required. SIMs with only mobile data will not work.

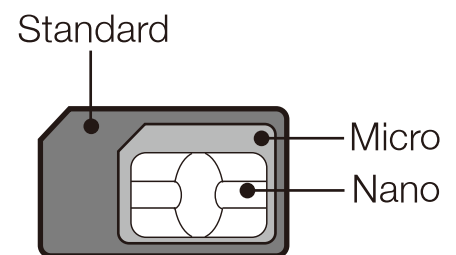
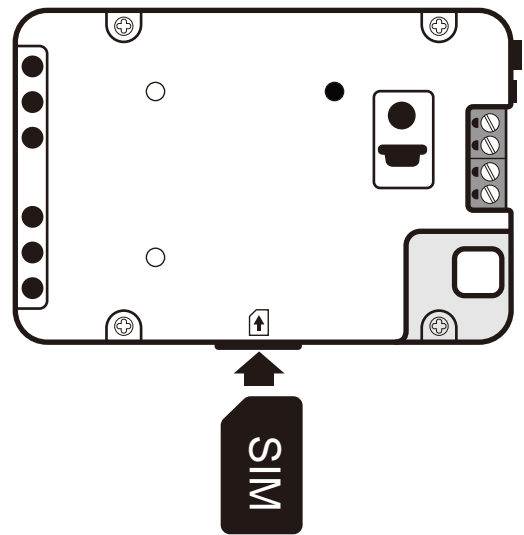


Figure 2.1

2.2 Power up the device

1. Once the relay and sensor wires are connected and fixed, power up the device by plugging in the power adaptor to the 12V DC input port of YOYOPower and to any 110-230V AC power outlet. If other 12 DC so is used make sure the polarity is correct (+ in the middle) .
2. Verify proper operation by checking the status indicators:
 - ▶ the network status indicator will flash while searching for a mobile network
 - ▶ the network status indicator will fade on and off when connected to a network

Your YOYOPower 4G Relay is now ready for use.

Both lines (electrical circuits) are by default set to Power OFF.

Note:

- ▶ Network status indicator that flashes continuously indicates that the SIM card fails (not present or faulty) or that a valid mobile network was not found. In this case the device is not operational.
- ▶ Check the network signal level. A poor network signal level may affect the performance of the device.

3 Start using YOYOPower

3.1 Register the Master and activate the device

All the functions of YOYOPower are set and controlled by sending SMS commands to YOYOPower. The general SMS command format is:
#command#parameter#.

Upon execution, each command is confirmed by an SMS response.

When YOYOPower is powered up for the first time, or after it has been reset to factory settings, it is ready for activation and registration of a Master (i.e. a mobile phone number) as administrator of the device.

YOYOPower is activated by sending *#00#* in an SMS to the phone number of the SIM that is installed in YOYOPower. The phone number of the sending phone is also registered as Master. .

Function	SMS command
Register Master's phone number and activate device	<i>#00#</i>
Change Master's phone number	<i>#14#Number#</i>
Check all registered Users	<i>#06#</i>

Number: phone number in international format (e.g. +46...), max 16 digits.

3.2 Add User phone numbers

YOYOPower 4G Relay (ER4) can be controlled from maximum 205 phone numbers.

- ▶ **Master** - one mobile phone number that has full privileges to control any function by SMS or phone call.
- ▶ **SMS Users** - up to 4 mobile phone numbers that can turn power ON or OFF by SMS commands or phone call and arm/disarm the alarm function by SMS command.
- ▶ **Phone call Users** - up to 200 telephone numbers that can switch Power ON or OFF by a phone call.

There are two methods to register users:

Method 1: Master sends SMS command that includes phone numbers to be added.

Method 2: Master sends SMS command to enable automatic registration of phone numbers from incoming phone calls. Only Phone call Users can register this way.

Function	SMS command
Add SMS User's phone numbers, one by one	#06#Number#
Add Phone call User's phone numbers (max 200 numbers, max 10 in each SMS)	#60#Number1#Number2#...#Number10#
Check registered users	#06#
Register the calling number of all calls within 60 min from now, as Phone call Users	#06#1#
Register the calling number of all calls continuously, as Phone call Users	#06#2#
Stop registering the calling numbers of incoming calls	#06#0#
Delete specified User's phone numbers (max 10 numbers in each SMS)	#15#Number1#...#Number10#
Delete all User numbers	#15#
Allow any phone number to control Power by calling – ON	#31#1#
Allow any phone number to control Power by calling – OFF (default)	#31#0#
Check all registered Users	#06#

Number: phone number in international format (e.g. +46...), max 16 digits. Callers with hidden phone numbers are ignored.

3.3 Connect and configure an optional Wired Sensor

An optional wired sensor can be connected to, and powered by, YOYOPower. By default, the wired sensor is named "Sensor"

- ▶ **Wired sensor input** - two screw terminals (marked "T1" and "T2") for input from optional wired NO/NC sensor (not included).
- ▶ **12V DC output** - two screw terminals (marked - and +) serve as optional power supply (12V DC, 200 mA) for a connected wired NO/NC sensor (not included).

Sensor activation can either control power (e.g. Power ON for 3 seconds to open a door lock) or send a notification by SMS (e.g. alert when a door opens) or both.

Function	SMS command
Change the name of the sensor	#30#Name#
Check status of the wired sensor	#30#

Name: max 8 characters, a-z, A-Z, 0-9, no spaces.

3.4 Rename Line 1 and Line 2

The two electrical circuits are by default named “Line 1” and “Line 2”. These can be renamed by SMS command.

Function	SMS command
Rename both lines	#04#Name1#Name2#

Name: max 8 characters, a-z, A-Z, 0-9, no spaces.

3.5 Power ON and OFF by SMS command

Both electrical circuits, “Line 1” and “Line 2” can be controlled by SMS commands.

Each power control command is confirmed by an SMS response. The response reports power status (ON or OFF), actual temperature (-30°C to 100°C) and if automatic power control functions are running (D, T, S).

‘D’ indicates that automatic power control with Delay is running.

‘T’ indicates that automatic power control by Thermostat is running.

‘S’ indicates that automatic power control by Schedule is running.

Function	SMS command
Switch Lines 1 & 2 to Power ON	#01#
Switch Lines 1 & 2 to Power ON for 1-60 seconds	#01#0#Seconds#
Switch Line 1 to Power ON	#01#1#
Switch Line 1 to Power ON for 1-60 seconds	#01#1#Seconds#
Switch Line 2 to Power ON	#01#2#
Switch Line 2 to Power ON for 1-60 seconds	#01#2#Seconds#
Switch Lines 1 & 2 to Power OFF	#02#
Switch Line 1 to Power OFF	#02#1#
Switch Line 2 to Power OFF	#02#2#

3.6 Power ON and OFF by Phone call

E.g. to open a connected door or door lock, circuits “Line 1” and/or “Line 2” can be controlled by an incoming phone call from an authorized phone number.

By default, the phone call will switch to Power ON for both lines, for a duration of 3 seconds, then switch to Power OFF.

Power control by Phone call can be set to control both lines, individually or in parallel.

The duration for which Power ON remains can be set to 1-3600 seconds for each line. If the duration is set to 0 (zero) seconds, then each phone call will turn the power ON and OFF alternately.

Function	SMS command
Phone calls switch Line 1 & 2 to Power ON for 1-3600* seconds (default)	#10#0#Seconds#
Phone calls switch Line 1 to Power ON for 1-3600* seconds	#10#1#Seconds#
Phone calls switches Line 2 to Power ON for 1-3600* seconds	#10#2#Seconds#
* 0 (zero) seconds switches alternately Power ON and OFF	
Phone calls switch alternately Line 1 and 2 to Power ON for 1-3600 seconds	#10#3#Seconds#
Phone calls switch Line 1 & 2 to Power ON - OFF	#10#0#
Phone calls switches Line 1 to Power ON - OFF	#10#1#
Phone calls switches Line 2 to Power ON - OFF	#10#2#
Check status of Power Control by Phone call	#10#

For door opening mechanisms that require that power is turned OFF to open, then connect the wires to screw terminals COM and NC. This way, a phone call will turn OFF power for some seconds, then turn it ON.

3.6.1 Check which numbers have called

The phone numbers of the last 10 phone calls can be checked and reported by SMS.

Function	SMS command
Check the last 10 phone calls	#25#
Report every 10 calls - ON	#25#1#
Report every 10 calls - OFF (default)	#25#0#

3.6.2 Block repeated phone calls from the same number

After processing a power control function activated by a phone call, YOYOPower blocks additional calls from the same caller for a duration of 40 seconds. The default duration can be adjusted by SMS command.

Function	SMS command
Block repeated phone calls from the same number for 1-60* seconds	#26#Seconds#
* 0 (zero) seconds duration will accept all calls.	
Check status of Block repeated phone calls	#26#

3.7 Power ON and OFF with Delay

To turn ON or OFF e.g. connected fans in one hour from now, circuits “Line 1” and/or “Line 2” can be controlled by a countdown timer.

Power ON and OFF by Delay can be set to control both lines, individually or in parallel.

The duration of the delay can be set 1-720 minutes.

While Power ON/OFF by Delay is running, Power ON/OFF by Schedule or by Thermostat, are suspended.

Function	SMS command
Delay Power ON 1-720 minutes on Lines 1 & 2	#11#0#1#Minutes#
Delay Power ON 1-720 minutes on Line 1	#11#1#1#Minutes#
Delay Power ON 1-720 minutes on Line 2	#11#2#1#Minutes#
Delay Power OFF 1-720 minutes on Lines 1 & 2	#11#0#2#Minutes#
Delay Power OFF 1-720 minutes on Line 1	#11#1#2#Minutes#
Delay Power OFF 1-720 minutes on Line 2	#11#2#2#Minutes#
Delay Power ON/OFF on Lines 1 & 2 – OFF (default)	#11#0#
Delay Power ON/OFF on Line 1 – OFF	#11#1#
Delay Power ON/OFF on Line 2 – OFF	#11#2#
Check status of Power ON/OFF with Delay	#11#

3.8 Power ON and OFF by weekly Schedule

To turn ON and OFF e.g. connected lights, circuits “Line 1” and/or “Line 2” can be controlled by a schedule set by the user.

Power ON/OFF by Schedule can be set to control both lines, individually or in parallel.

YOYO**Power 4G Relay**

The duration of Power ON is set by a start time and an end time (00:00 – 23:59) and by day (Mon, Tue, Wed, Thu, Fri, Sat, Sun, Daily, Mon-Fri, Sat-Sun).

While Power ON/OFF by Schedule is running, it is possible to temporarily alter the power status by SMS command or by phone call. The schedule will keep running and the power will turn ON or OFF in accordance with the next scheduled event.

While Power ON/OFF by Delay is running, Power ON/OFF by Schedule and/or by Thermostat are suspended. While Power ON/OFF by Schedule is running, Power ON/OFF by Thermostat will run only when scheduled Power ON.

Function	SMS command
Schedule Power ON/OFF on Lines 1 & 2 - ON	#20#0#Day#StartTime#EndTime#
Schedule Power ON/OFF on Line 1 - ON	#20#1#Day#StartTime#EndTime#
Schedule Power ON/OFF on Line 2 - ON	#20#2#Day#StartTime#EndTime#
Schedule Power ON/OFF on Lines 1 & 2 – OFF (default)	#20#0#
Schedule Power ON/OFF on Line 1 - OFF	#20#1#
Schedule Power ON/OFF on Line 2 - OFF	#20#2#
Check status of Power ON/OFF by schedule	#20#

Day: one digit, 0-9 (see table below)

Value	Day
0	Monday to Sunday
1	Monday
2	Tuesday
3	Wednesday
4	Thursday

Value	Day
5	Friday
6	Saturday
7	Sunday
8	Monday to Friday
9	Saturday and Sunday

StartTime and EndTime: 4 digits, hhmm (24 hours).

Power ON at StartTime and Power OFF at EndTime.

The *EndTime* must be later than the *StartTime*.

The *StartTime* and the *EndTime* need to be within the same day.

For example: #20#0#0#0800#1800# will activate schedule control of both circuits (Line 1 and Line 2) switching to Power ON at 08:00 and to Power OFF at 18:00 every (Monday through Sunday).

3.9 Power ON and OFF by Thermostat

To switch ON and OFF e.g. a connected heater or an air conditioner when the temperature drops or rises, "Line 1" and/or "Line 2" can be controlled by the built-in thermostat function using a connected temperature sensor (included in the package).

The temperature range to monitor is set with an upper and a lower temperature level (max range -30C to +100C) and an operating mode (heating or cooling).

Power ON/OFF by Thermostat can run in either Heating or Cooling mode. In Heating mode, Power ON occurs when the actual temperature falls below the set temperature range and Power OFF occurs when the range is exceeded. In Cooling mode, Power ON occurs when the actual temperature exceeds the set temperature range and Power OFF occurs when actual temperature falls below.

Power ON/OFF by Thermostat can be set to control both lines, individually or in parallel.

While Power ON/OFF by Thermostat is running, it is possible to temporarily alter the power status by SMS command or by phone call. The thermostat will keep running and Power ON or OFF will occur next time the temperature exceeds or falls below the set thermostat interval.

While Power ON/OFF by Delay is running, Power ON/OFF by Schedule or by Thermostat are suspended. While Power ON/OFF by Schedule is running, Power ON/OFF by Thermostat will run only when Power ON is scheduled.

Power ON/OFF with Thermostat is processed once every minute.

If the temperature sensor is lost or in error while Power ON/OFF by Thermostat is running, then the relevant Line will Power OFF automatically.

Function	SMS command
Temperature deviations turn Power ON/OFF on Lines 1 & 2 - ON	#24#0#Mode#LowTemp#HighTemp#
Temperature deviations turn Power ON/OFF on Line 1 - ON	#24#1#Mode#LowTemp#HighTemp#
Temperature deviations turn Power ON/OFF on Line 2 - ON	#24#2#Mode#LowTemp#HighTemp#

Function	SMS command
Temperature deviations turn Power ON/OFF on Lines 1 & 2 - OFF (default)	#24#0#
Temperature deviations turn Power ON/OFF on Line 1 - OFF	#24#1#
Temperature deviations turn Power ON/OFF on Line 2 - OFF	#24#2#
Check the status of Power ON/OFF by Thermostat	#24#

Mode: one digit, 1 (Heating mode) or 2 (Cooling mode),

LowTemp and HighTemp: 1-3 digits, -30 to 100, no decimals, LowTemp must be lower than HighTemp

Heating mode: Power ON when below LowTemp and OFF when above HighTemp

Cooling mode: Power ON when above HighTemp and OFF when below LowTemp

By default, the LowTemp is +15°C and the HighTemp is +25°C

-30°C to +100°C is supported by the included temperature sensor on cable (TSG). Other sensors may support a different range.

For example, with the command #24#0#1#-3#11# both lines will switch to Power ON to supply power to e.g. heating apparatus, when the actual temperature falls below -3°C. On the other hand, both lines will be switched to Power OFF and power supply to the heating apparatus will be interrupted, when the actual temperature rises above +11°C.

3.10 Power ON and OFF by wired NO/NC sensor

E.g. to unlock or open a door, “Line 1” and/or “Line 2” can temporarily be switched to Power ON by a connected wired sensor (e.g. a button or a motion sensor).

By default, Power ON/OFF by wired sensor is OFF (disabled).

Power control by NO/NC sensor can be set to Power ON both lines, individually or in parallel.

The duration for which Power ON remains can be set 1-3600 seconds for each line. If the duration is set to 0 (zero) seconds, then each sensor activation will turn Power ON and Power OFF alternately.

After each sensor activation the function is suspended for 60 seconds.

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Function	SMS command
Sensor activation turns Power ON for 1-3600* Seconds on Lines 1 & 2 – ON	#09#0#Seconds#
Sensor activation turns Power ON for 1-3600* Seconds on Line 1 – ON	#09#1#Seconds#
Sensor activation turns Power ON for 1-3600* Seconds on Line 2 – ON	#09#2#Seconds#
<i>* 0 (zero) seconds turns alternately Power ON and Power OFF</i>	
Sensor activation turns Power ON for 1-3600 sec alternately on Line 1 and Line 2	#09#3#Seconds#
Sensor activation turns Power ON/OFF on Lines 1 & 2 – OFF (default)	#09#0#
Sensor activation turns Power ON/OFF on Line 1 – OFF	#09#1#
Sensor activation turns Power ON/OFF on Line 2 – OFF	#09#2#
Check status of Sensor activated Power ON/OFF	#09#

3.11 Monitoring of power supply (12V DC input) level

YOYOPower monitors the level (voltage) of the supplied power. The actual level can at any time be requested by SMS command. Deviations from a preset level can be notified by SMS. This is especially useful when power is supplied from a 12V battery or a solar panel system.

Function	SMS command
Check actual 12V DC input voltage	#13#
Notify when voltage deviation alarm - ON	#13#Voltage#
Voltage deviation alarm – OFF (default)	#13#0#

Voltage: three digits e.g. 115 (i.e. 11.5V), valid range 90-150 (i.e. 9.0V-15.0V).

Voltage deviation (above or below) the set voltage is notified by SMS.

The power flow of Line 1 and Line 2 are not monitored.

3.12 Monitoring of actual temperature

To monitor the surrounding temperature and notify by SMS if it deviates from preset limits, a Temperature alarm function can be set and activated.

Function	SMS command
Set the temperature range to monitor and activate the alarm function	#22#LowTemp#HighTemp#

Function	SMS command
Notify when the actual temperature deviates from the set range - ON	#22#1#
Temperature alarm – OFF (default)	#22#0#
Check the status of the Temperature alarm	#22#

LowTemp and HighTemp: 1-3 digits, -30 to 100, no decimals, LowTemp must be lower than HighTemp

By default, the LowTemp is +15°C and the HighTemp is +25°C

-30°C to +100°C is supported by the included temperature sensor on cable (TSG)

Other sensors may support a different range.

3.13 Check the status of the device

Function	SMS command
Check power, temperature, and network status	#07#

3.14 Periodic status reports

YOYOPower can be set to periodically report the actual device status by SMS. The periodicity is set, and the function is activated by SMS commands.

Function	SMS Command
Set the day and time for periodic status reports and activate the function	#23#Day#Time#
Periodic status report - ON	#23#1#
Periodic status report - OFF (default)	#23#0#
Check periodic status report settings	#23#

Day: one digit, 1-7 (Monday-Sunday).

Time: 4 digits, hhmm (24 hours).

For example #23#1234567#1300# status reports will be sent every day at 13:00.

3.15 Notifications by SMS

3.15.1 Notification in case of interrupted power supply

Interruptions and return of the power supply (12V DC) are by default notified by SMS.

Note: the power of Line 1 and Line 2 are not monitored.

Function	SMS Command
Notify when the power supply has been lost and when it resumes – ON (default)	#05#1#
Notify when the power supply has been lost and when it resumes – OFF	#05#0#

3.15.2 Notification when the wired NO/NC sensor triggers

By default, YOYOPower notifies by SMS when a connected wired sensor triggers. These notifications can be turned OFF or ON by SMS commands.

By default, the wired sensor triggers when the sensor circuit “closes” (connect i.e. changes from open to closed) and when it “opens” (disconnect, i.e. changes from closed to open). With SMS commands, YOYOPower can be set to trigger only when the sensor circuit “closes” or only when it “opens”.

By default, the wired sensor is named “Sensor”. To change the name of the sensor, see section “Connect and configure an optional Wired Sensor”.

After each sensor activation the function is suspended for 60 seconds.

Function	SMS command
Notify when the wired sensor triggers – ON (default)	#17#1#
Notify when the wired sensor triggers – OFF	#17#0#
Trigger when the wired sensor circuit CLOSES and OPENS (default)	#44#3#
Trigger only when the wired sensor circuit CLOSES	#44#1#
Trigger only when the wired sensor circuit OPENS	#44#2#
Check the status of the wired sensor	#44#

3.15.3 Notification in case of low mobile network signal

YOYOPower can notify by SMS when the mobile network signal is low. The network signal scale is 1-31. Below 10 is too low for proper operation. SMS to and from YOYOPower may fail to deliver if the signal is too low.

Function	SMS command
Notify when network signal is low - ON	#27#1#
Notify when network signal is low – OFF (default)	#27#0#
Check status of mobile network	#27#

3.15.4 Notification when power switches by phone call

By default, there is no notification when the power has been switched by a phone call. By SMS commands, this notification can be turned ON or OFF.

Function	SMS command
Notify when the power switches by phone call - ON	#32#1#
Notify when the power switches by phone call – OFF (default)	#32#0#

3.15.5 Notifications to SMS Users

SMS notifications are by default sent to the mobile phone numbers of the Master and of registered SMS Users. Notifications to SMS Users can be disabled by SMS commands.

Notifications are not sent to Phone Call users. Phone call users only receive SMS confirmations on their own phone calls.

Function	SMS command
Notifications to SMS Users – ON (default)	#12#1#
Notifications to SMS Users – OFF	#12#0#

3.16 Reset the device

This function resets all settings to their original default values and removes Master and User phone numbers.

Method 1: Press and hold the Reset button (see figure 1) for 5 seconds.

Method 2: Master sends the following SMS command:

Function	SMS command
Reset device back to factory settings	#08#Code#

Code: reset code, 4 digits, default code is 1234.

A long “beep” tone from the device indicates that the reset has been completed.

4 SMS command list

Category	Function	SMS command
Master and Users	Register Master's phone number and activate device (new or after reset)	#00#
	Change Master's phone number	#14#Number#
	Add SMS User's phone number	#06#Number#
	Add Phone call User's phone number (up to 10 at a time)	#60#Number1#...#Number10#
	<i>Number: phone number in international format (e.g. +46...), max 16 digits.</i>	
	Check all registered Users	#06#
	Register the numbers of all incoming phone calls within 60 min as Phone call Users	#06#1#
	Register the numbers of all incoming phone calls as Phone call Users - ON	#06#2#
	Register the numbers of all incoming phone calls as Phone call Users – OFF (default)	#06#0#
	Delete User's phone number	#15#Number#
	Delete all User's numbers (except Master)	#15#
	Accept calls from any phone number – ON	#31#1#
Accept calls from any phone number – OFF (default)	#31#0#	
Wired sensor	Change the name of the wired sensor	#30#Name#
	Check the status of the wired sensor	#30#
	<i>Name: max 8 characters, a-z, A-Z, 0-9, no spaces.</i>	
Lines 1 & 2	Rename both lines (max 8 characters, a-z, A-Z, 0-9, no spaces)	#04#Name1#Name2#
	<i>Name: max 8 characters, a-z, A-Z, 0-9, no spaces.</i>	
Power ON/OFF by Phone call	Phone calls switch Lines 1 & 2 to Power ON for 1-3600* Seconds (default 3 seconds)	#10#0#Seconds#
	Phone calls switch Line 1 to Power ON for 1-3600* Seconds	#10#1#Seconds#
	Phone calls switch Line 2 to Power ON for 1-3600* Seconds	#10#2#Seconds#
	<i>* 0 (zero) Seconds switch alternately Power ON and OFF</i>	

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Power ON/OFF by Phone call	Phone calls switch alternately Line 1 and 2 to Power ON for 1-3600 <i>Seconds</i>	#10#3# <i>Seconds</i> #
	Phone calls switch Lines 1 & 2 to Power ON - OFF	#10#0#
	Phone calls switch Line 1 to Power ON-OFF	#10#1#
	Phone calls switch Line 2 to Power ON-OFF	#10#2#
	Check status of Power ON/OFF by Phone call	#10#
	Check the last 10 phone calls	#25#
	Report every 10 phone calls - ON	#25#1#
	Report every 10 phone calls – OFF (default)	#25#0#
	Block repetitive phone calls for 1-60* <i>Seconds</i>	#26# <i>Seconds</i> #
	<i>* 0 (zero) Seconds will accept all calls</i>	
	Check status of Block repetitive Phone calls	#26#
Power ON/OFF by SMS	Switch Lines 1 & 2 to Power ON	#01#
	Switch Lines 1 & 2 to Power ON for 1-60 <i>Seconds</i>	#01#0# <i>Seconds</i> #
	Switch Line 1 to Power ON	#01#1#
	Switch Line 1 to Power ON for 1-60 <i>Seconds</i>	#01#1# <i>Seconds</i> #
	Switch Line 2 to Power ON	#01#2#
	Switch Line 2 to Power ON for 1-60 <i>Seconds</i>	#01#2# <i>Seconds</i> #
	Switch Lines 1 & 2 to Power OFF	#02#
	Switch Line 1 to Power Turn OFF	#02#1#
	Switch Line 2 to Power OFF	#02#2#
Power ON/OFF with Delay	Delay Power ON 1-720 <i>Minutes</i> on Lines 1 & 2	#11#0#1# <i>Minutes</i> #
	Delay Power ON 1-720 <i>Minutes</i> on Line 1	#11#1#1# <i>Minutes</i> #
	Delay Power ON 1-720 <i>Minutes</i> on Line 2	#11#2#1# <i>Minutes</i> #
	Delay Power OFF 1-720 <i>Minutes</i> on Lines1 & 2	#11#0#2# <i>Minutes</i> #
	Delay Power ON 1-720 <i>Minutes</i> on Line 1	#11#1#2# <i>Minutes</i> #
	Delay Power ON 1-720 <i>Minutes</i> on Line 2	#11#2#2# <i>Minutes</i> #
	Delay Power ON/OFF on Lines 1 & 2 - OFF (default)	#11#0#

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	Delay Power ON/OFF on Line 1 - OFF	#11#1#
	Delay Power ON/OFF on Line 2 - OFF	#11#2#
	Check status of Power ON/OFF with Delay	#11#
Power ON/OFF by Schedule	Schedule Power ON/OFF on Lines 1 & 2 - ON	#20#0#Day#StartTime#EndTime#
	Schedule Power ON/OFF on Line 1 - ON	#20#1#Day#StartTime#EndTime#
	Schedule Power ON/OFF on Line 2 - ON	#20#2#Day#StartTime#EndTime#
	<i>Day: 0 (Mon-Sun), 1 (Mon), 2 (Tue)...7 (Sun), 8 (Mon-Fri), 9 (Sat-Sun)</i> <i>StartTime/EndTime: hhmm (24 hrs)</i>	
	Schedule Power ON/OFF on Line 1 & 2 - OFF (default)	#20#0#
	Schedule Power ON/OFF on Line 1 - OFF	#20#1#
	Schedule Power ON/OFF on Line 2 - OFF	#20#2#
	Check status of Power ON/OFF by Schedule	#20#
Power ON/OFF by Thermostat	Temperature deviations turn Power ON/OFF on Lines 1 & 2 - ON	#24#0#Mode#LowTemp#HighTemp#
	Temperature deviations turn Power ON/OFF on Line 1 - ON	#24#1#Mode#LowTemp#HighTemp#
	Temperature deviations turn Power ON/OFF on Line 2 - ON	#24#2#Mode#LowTemp#HighTemp#
	<i>Mode: one digit, 1 (heating mode) or 2 (cooling mode)</i> <i>LowTemp and HighTemp: 1-3 digits, range -30-100, no decimals</i>	
	Temperature deviations turn Power ON/OFF on Lines 1 & 2 - OFF (default)	#24#0#
	Temperature deviations turn Power ON/OFF on Line 1 - OFF	#24#1#
	Temperature deviations turn Power ON/OFF on Line 2 - OFF	#24#2#
	Check status of Power ON/OFF by Thermostat	#24#
Temperature alarm	Set temperature alarm range - ON	#22#LowTemp#HighTemp#
	<i>LowTemp and HighTemp: 1-3 digits, -30 to 100, no decimals, LowTemp must be lower than HighTemp</i>	
	Notify deviations from the set temperature range - ON	#22#1#
	Temperature alarm function - OFF	#22#0#

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	Check status of the Temperature alarm function	#22#
Power supply level monitoring	Check actual power input voltage	#13#
	Notify deviation from set <i>Voltage</i>	#13# <i>Voltage</i> #
	<i>Voltage: 3 digits, range 90-150 (9.0V-15.0V), e.g. 11.5V is entered as 115</i>	
	Power supply level monitoring – OFF (default)	#13#0#
Power ON by wired sensor activation	Sensor activation turns Power ON for 1-3600* <i>Seconds</i> on Lines 1 & 2 – ON	#09#0# <i>Seconds</i> #
	Sensor activation turns Power ON for 1-3600* <i>Seconds</i> on Line 1 – ON	#09#1# <i>Seconds</i> #
	Sensor activation turns Power ON for 1-3600* <i>Seconds</i> on Line 2 – ON	#09#2# <i>Seconds</i> #
	<i>* 0 (zero) Seconds turns alternately Power ON and Power OFF</i>	
	Sensor activation turns power ON for 1-3600 <i>Seconds</i> alternately on Line 1 and Line 2	#09#3# <i>Seconds</i> #
	Sensor activated Power ON on Lines 1 & 2 – OFF (default)	#09#0#
	Sensor activated Power ON on Line 1 –OFF	#09#1#
	Sensor activated Power ON on Line 2 –OFF	#09#2#
Check the status of Sensor activated Power ON	#09#	
Notifications by SMS	Notify when the power supply has been lost and when it resumes – ON (default)	#05#1#
	Notify when the power supply has been lost and when it resumes – OFF	#05#0#
	Notify when the wired sensor triggers – ON (default)	#17#1#
	Notify when the wired sensor triggers – OFF	#17#0#
	Trigger when the wired sensor circuit CLOSES and OPENS (default)	#44#3#
	Trigger only when the wired sensor circuit CLOSES	#44#1#
	Trigger only when the wired sensor circuit OPENS	#44#2#
	Check the status of the wired sensor	#44#
	Notify when the network signal is low - ON	#27#1#
	Notify when the network signal is low – OFF (default)	#27#0#

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	Check status of the mobile network	#27#
	Notify when power switches by phone call - ON	#32#1#
	Notify when power switches by phone call – OFF (default)	#32#0#
	Notifications to SMS Users – ON (default)	#12#1#
	Notifications to SMS Users – OFF	#12#0#
SMS language	Change SMS language - English	#39#0#
	Change SMS language - Swedish	#39#1#
Device status	Check the status of the device	#07#
Resetting the device	Reset the device to factory settings	#08#1234#

5 Important information

Please read this information before using your YOYOPower.

Power Store

- ▶ YOYOPower 4G contain a small power store so that it can send an SMS when power is lost.
- ▶ The transmitter in YOYOPower 4G remains active for a while after it has been unplugged.

Safety and Usage Guidelines

- ▶ Read the terms and conditions for your SIM card and mobile operator service.
- ▶ When inserting or removing the SIM card, do not touch the gold connectors.
- ▶ Insert only a Mini (standard) size SIM card. Make sure any Micro or Nano cut-outs are not broken.
- ▶ Treat your YOYOPower carefully; store it safely and do not drop or throw it.
- ▶ Do not expose your YOYOPower to dust, liquid, moisture or humidity, extreme high or low temperatures, naked flames, lit tobacco products or other heat sources.
- ▶ Do not use your YOYOPower in hospitals or near medical equipment.
- ▶ If you have personal medical devices such as a pacemaker, consult your physician and the manufacturer for advice.
- ▶ Do not use your YOYOPower in aircraft or in any place where use of radio transmitters is prohibited, where a potentially explosive atmosphere is present or in proximity to car airbags.
- ▶ Do not attempt to take your YOYOPower apart; there are no user-serviceable components inside the product. Improper use, disassembling or product modification causes warranty loss.
- ▶ Do not allow children to play with your YOYOPower; small parts such as SIM cards could be detached and represent a choking hazard.
- ▶ For optimum performance do not cover your YOYOPower; position it with good access to the mobile signal.
- ▶ You should not rely on any SMS or phone call capability that your YOYOPower provides for emergency or essential communications.
- ▶ The power consumption of the appliances connected with the product cannot exceed 3500W and the current cannot exceed 16A.

- ▶ This product must be installed by a qualified person. All electrical wiring must be carried out in accordance with the appropriate regulations for the place of installation.
- ▶ Before attempting any electrical connection work, please ensure all power sources have been cut off.

Disposal and Recycling

- ▶ Do not dispose of your YOYOPower with normal household waste.
- ▶ Dispose of your YOYOPower at an appropriate collection point for electronic equipment.
- ▶ For more information, contact your local authority, your household waste collection depot or the retailer where you purchased your YOYOPower.

6 Main technical specifications

Power Supply	12V AC / DC 1A
Relay type	Latching relay 16A 250V AC
Connections	Terminal block wiring
Operating temperature	-10°C~+35°C
Store temperature	-20°C~+60°C
Relative humidity	10-90%, without condensation
Temperature Sensor, measuring range	-30°C~100°C
SIM	“Mini” format, SMS service required
4G LTE bands	Cat1 LTE FDD: B1, B3, B5, B7, B8, B20 LTE TDD: B40
2G GSM	900MHz,1800Mhz
Antenna connector	SMA
Dimensions (without accessories)	113x72x31mm
Weight (without accessories)	165 g

YOYO**Power** 4G Relay[®]

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