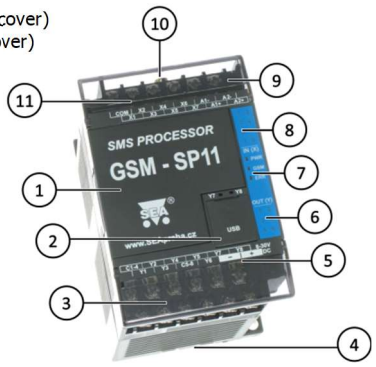
SP11, SP11B – User manual

1. Introduction

GSM-SP11 and SP11B (for short SP11) is device for **remote control and monitoring**, SP11 uses **GSM network** for communication. SP11 has **8 digital outputs**, that can be remotely switched on/off or generate pulse. SP11 has **7 digital inputs.** If input change it´s own state SP11 can react on it via sending SMS message or by voice call. And **2 analog inputs** (clamps A1+, A1- and A2+, A2-), those can be set for measuring current (**0 to 20 mA**), voltage (**0 to 10 V**) or **temperature** measurement for different kinds of temperature sensors.

Detailed information about SP11 activity can be **stored in device**. Functions and names of inputs/outputs, phone numbers, password etc. are customizable through PC with USB cable or remotely by GPRS through program SeaConfigurator. This configuration program is possible download for free from www.seapraha.cz (in search type in „Configurator"). Lower part of the box has integrated **DIN rail** and SP11 can be easily **mount into switchboard**.

(1) SIM card holder (under detachable cover)
(2) USB connector type B (under the cover)
(3) digital outputs (Y)
(4) DIN rail holder
(5) power supply 8 to 30 V_{SS}
(6) LED indication of outputs
(7) LED indication of operational status
(8) LED indication of inputs
(9) analog inputs
(10) GSM antenna connector
(11) digital inputs (X)



2. Package Content

1pcs **GSM-SP11 or SP11B**
1pcs GSM antenna (order code GSM-ANT05S)
1pcs USB cable A-B (order code HW-11.02.8818)

Accessories – Must be ordered separately!
Box with power supply GSM-SP-BOX-MV
Temperature sensor GSM-C-T2 … range from -20 °C to +50 °C (integrated KTY81-210)
Temperature sensor GSM-C-T3 … range from -40 °C to +180 °C (integrated Pt1000)

3. Installation

Caution!

Before connecting analog input make sure you have the right configuration for it! (typically voltage/current input).

Before inserting the SIM card into the *SP11* device, we recommend to turn off setting of the "PIN code"!
Insert the active SIM card (= at least one call was made) to any mobile telephone and turn off the requirement of setting the PIN. On most mobile telephones, this option can be found in menu "Setting the telephone protection". or "Setup -> Security -> PIN control"

1. Before powering up **SP11** insert activated SIM card into SIM card reader (under detachable cover) and mount the GSM antenna. SIM card is inserted to the reader by slope side heading down and contacts heading to the middle of the SP11. Recognize right insert by mechanical click. To remove the SIM card - press the SIM card in direction into the ***SP11*** until mechanical click. The SIM card can be the freely removed.

2. Connect device to DC power supply. DC voltage must be **8-30Vdc**, connect to clamps **+** and **–** and turn on the power supply.
3. If power is good, green LED PWR goes on. After about **20 sec** blue LED **GSM** will starts flashing every **3 sec**.
4. Send SMS message in format **1234 STATE** to the SP11´s phone number. Device will respond with state SMS message in format „**GSM-SP11: Y1=vyp……X1=vyp….AP=12V….**".For further configuration you have to use program SeaConfigurator(see below).
5. Install program SeaConfigurator, It´s latest version is available for download on www.seapraha.cz (in search type in „Configurator"). Downloaded program install according to the instructions of installation guide. USB driver will be installed automatically.
6. Run program SeaConfigurator (Start ⇨ Programs ⇨ SEA ⇨ Configurator ⇨ Configurator). Connect device to PC through USB cable, which is included in package. During configuration through USB cable you have to have connected power supply to SP11!Load configuration from the device by clicking on button **[From station]**. In tab „Settings" – „Users" Type in your phone number and name.
7. Customized configuration must be uploaded to the SP11. Click on button **[To the station]**. If you let the USB cable connected, you can watch in tab „Monitoring" current status of the SP11 and statuses of it´s own inputs and outputs.

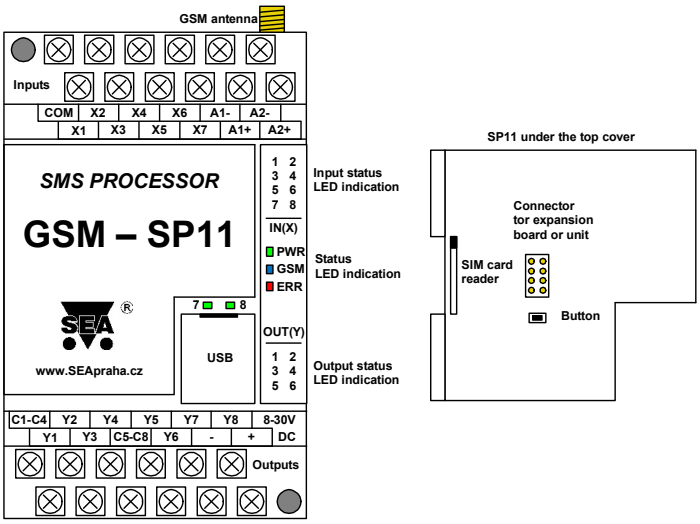
8. Digital inputs (signals to the SP11) connect to clamps X1 to X7 and digital outputs (signals out from the SP11) connect to clamps Y1 to Y8. Recommended wiring of those signals are written in chapter „Hardware". When any input changes state, SP11 can send SMS message to you phone in format e.g. "Input1 is ON" (Depends on configuration).

4. Technical specifications

Parameter		Symbol	Condition	MIN.	TYP	MAX	Units
Dimensions	Width	š			60		mm
	Height (without GSM antenna)	v			90		mm
	Depth (from DIN holder)	h			80 53 *1) Slim		mm
Power supply	DC Voltage	V_{CC}		8		30	V_{DC}
	Current	I_{CC}	V_{CC} = 12V		0,14	0,5 *2)	A
	Average power consumption	P_{CC}			1,67	6	W
Digital DC inputs (any polarity)	Number	-			7		-
	Voltage log. H	$\|V_{IN}\|$		4	12	30	V
	Voltage log. L	$\|V_{IN}\|$			<2	4	V
	Current	I_{IN}	V_{IN} = 12V		2,5		mA
Digital outputs DC, AC	Number	-			8		-
	Voltage DC	V_{OUTDC}				50	V_{DC}
	Voltage AC	V_{OUTAC}				35	V_{AC}
	Current DC	I_{OUTDC}				90	mA
	Current AC	I_{OUTAC}				90	mA
Analog inputs A1 a A2: (customizable)	Number	-			1		-
	Measured unit	-	Analog input with customizable conversion, adjustable for different measurements 0 to 10V; 0 to 20mA (input resistance 75Ω); temperature sensors: KTY (-50 to +150°C); Pt100 (-100 to +300°C); Pt1000 (-100 to +300°C);				-
	Voltage		max			12	V
	Current	-	max			50	mA
	input resistance		Voltage input		100		kΩ
	input resistance	R_{IN}	Current input		75		Ω
	Resolution	-			12		bits
GSM module	Frequencies		850/900/1800/1900				MHz
Temperature	Operational	t_A		-20		+45	°C
Humidity	Operational	h_A				90	%

*1) We can make box smaller „Slim" design on request.
*2) Average consumption is when GSM network is connected and battery is charged. Every output switched on increases consumption by 1mA. Max consumption is short when device is downloading data via GPRS and weak signal and discharged battery. SP11 is designed for installation into switchboard with min. protection at least IP44!

5. Hardware



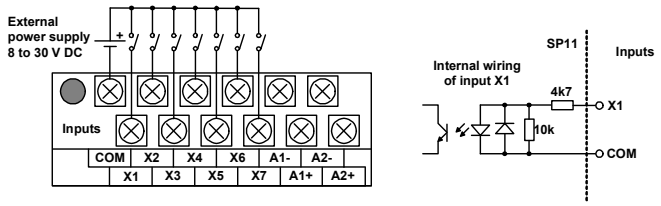
Clamps A1-, A1+ a A2-, A2+ (analog input):
… voltage input 0 to +10 V (clamp A1+ / A2+ connect to higher potential!)
… current input 0 to +20 mA (clamp A1+ / A2+ connect to higher potential!)
… temperature sensor KTY81-210, Pt100, Pt1000 (order of connection doesn´t matter)

Caution!

Everywhere where is risk of interference, we recommend using **galvanically separated power supply** for inputs and outputs from SP11´s power supply. You can use power supply GSM-PWR1.

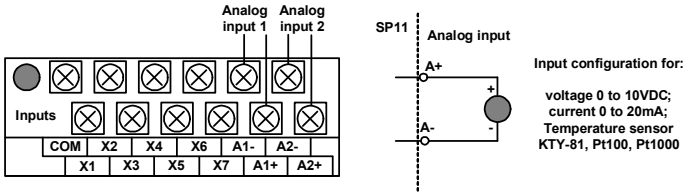
5.1 Digital inputs (X)

Digital inputs of SP11 are marked from X1 to X7. Clamp COM is common for all digital inputs. On the picture below you can see example connection of external circuits and internal connection of input X1 (same for all digital inputs). It doesn´t matter on polarity of clamp COM, it can be plus or minus.



5.2 Analog inputs (A1,A2)

SP11 has two customizable analog inputs (A1, A2), they are connected to input terminal box (marked as A1+, A1- and A2+, A2-). Analog input can be configurated for measuring voltage 0 to 10 Vdc, current 0 to 20 mA or temperature via temperature sensors KTY81-210, Pt100 or Pt1000.



Measured values of voltage and current can be converted to units specified by user. E.g. Measured current 10 to 20mA can be displayed like pressure 0 to 5 Mpa. (look to the configuration program **SeaConfigurator**).

Caution!

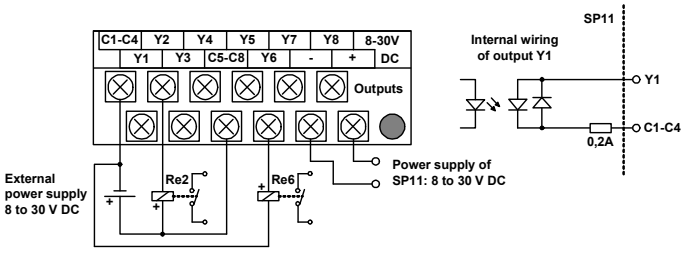
Analog inputs must be right configurated via program **SeaConfigurator** at first and then connect measured signals! This prevents damaging input circuits during wrong configuration. E.g. If input is set as current input can´t be used for measuring voltage! If input is set for measuring temperature you can only use passive (resistance) sensor and it doesn't matter on polarity.

Counter

The device contains a built-in pulse counter. The principle of the counter lies in its ability to count the number of pulses at the input or output terminals, record them and convert them to specific values, such as kWh or litres. For example, you can calculate the number of switching on/off the pump, operating hours or consumption from electricity meters and water meters. Multiple counters can be set for each input or output and the cycle setting allows the counters to be reset. When a certain number of pulses is reached or at the end of the cycle, alarm message can be sent, for example via SMS.

5.3 Digital outputs (Y)

Digital outputs of SP11 are marked from Y1 to Y8. Clamp C1-4 is common for outputs Y1 to Y4 and clamp C5-8 is common for outputs Y5 to Y8. On the picture below you can see example connection of external circuits and internal connection of output Y1 (same for all outputs). Output Y2 switches negative power line of the relay´s coil Re2 and output Y6 switches positive power line of the relay´s coil Re6 (relay coil voltage must be same as voltage of the power supply!). Polarity of clamp C1-4 and clamp C5-8 doesn´t matter.



5.4 Front panel

Front panel of SP11 has **State LEDs** and **indication LEDs** of inputs and outputs. State is displayed for inputs X1 to X7 and for outputs Y1 to Y8 (indication LEDs for Y7 and Y8 are situated above USB connector). When input/output is ON, corresponding LED glows or blinks.

Under detachable cover are situated **SIM card reader**, **button** for sleep mode and **connector** for extension module.

SIM card is inserted to the reader by slope side heading down and contacts heading to the middle of the SP11. Recognize right insert by mechanical click. To remove the SIM card - press the SIM card in direction into the ***SP11*** until mechanical click. The SIM card can be the freely removed.

On **extension connector** can be connected communication board or by flat cable extension module which will be situated on left side of SP11 on DIN rail. **USB connector** for connection to PC is under folding cover next to the detachable cover.

LED	Color	Meaning			
		Off	On	Blink 1 per 2s	Fast 1:1
PWR	green	device is turned off	connected to external power supply 8-30 V	Device is powered from internal battery	-
GSM	blue	no GSM signal	different GSM error occurred	working status	SIM card problem
ERR	red	working status	error	error	error
1 to 7 (IN)	green	input isn´t active	input is active	Waiting for input recognition before sending SMS message .	
1 to 8 (OUT)	green	output is off	output is on	Output is regulated or pulse is generated on output.	-

5.5 Datalogger

SP11 can save (log) detailed information about it´s own activity. Saved log can be used for analysing activity of device. User can set up which information will be saved to log file during configuration of **SP11** via program **SeaConfigurator**. Is possible to save information about input/output signals or received/send SMS messages. File type of log file is .csv (= Comma Separated Values). Name of log file is derived from actual date (data.csv).
There are two types of log records: periodic and event. Multiple logs file can be generated in same day distinguished from each other by symbol „@" and letter. It can happen in those cases: Reset SP11, writing configuration and pulling out SIM card. (Examples of log file´s names: 130205.csv; 130205@A.csv; 130205@B.csv; 130205@C.csv; etc.). Log files can be deleted in program **SeaConfigurator**.

There are two types of log records: periodic and event. Event record contains actual analog values. Periodic saves average, minimal or maximal analog value.

These are typical saved values:
LocalTime;type;phone;text;Y1;Y1.cmd;Y2;Y2.cmd;Y3;Y3.cmd;Y4;Y4.cmd;Y5;Y5.cmd;Y6;Y6.cmd;Y7;Y7.cmd;Y8;Y8.cmd;X1;X2;X3;X4;X5;X6;X7;PWW;AP;A1;A2;ALM1;Batt.Chg;Batt.Cap;T.int;Ubat;Inab;GSM.cell;GSM.signal;GSM.credit;

Example of one „line" of record:
2014-05-04 14:15:43;1;;;0;;0;;0;;0;;0;;0;;0;;1;;0;1;0;0;0;0;0;1;16,1;17,6;5,4;0;100;?;27,5;4209;1;23002F,2F20,049E_0030;38;;

label	Meaning	Example
Time Local	Local date and time when event occurred	2015-04-01 15:32:14
type *1)	Type of saved record (1 to 6)	1
phone	Phone number	420123456789
text	Text of SMS message	
Y1	State of output Y1	0
Y1.cmd *2)	Command for output Y1 ... Y2,Y2.cmd,Y3,Y3.cmd,Y4,Y4.cmd,Y5,Y5.cmd,Y6,Y6.cmd,Y7,Y7.cmd,Y8,Y8.cmd	P
X1	State of input X1 ... X2,X3,X4,X5,X6,X7	1
PWW	Digital input power supply	1
AP	Analog input "power" [V]	14.4
A1 *3)	State of analog input A1 ... A2	O
Unit 1	Presence of extension module	0
ALM1 *4)	State of alarm 1	0
ALM2 *4)	State of alarm 2	0

Batt.Chg	Approximate backup battery charge level [%]	100
Batt.Cap	Approximate long term backup battery charge level [%]	76
T.int	Internal temperature of the device [°C]	29.2
S3	GSM signal strength – filtrated value [%]	38
Ubat	Current battery voltage [mV]	4193
Inab	Current approximate service value about backup battery charging	398
GSM.cell	Information about BTS	23002F,0404,047A_006E
GSM.signal	current GSM signal strength [%]	35
GSM.credit	Credit on pre-paid SIM card	

*1) Record type:
1 – periodic depends on time
2 – also when digital input/output is changed
3 - received SMS
4 - sent SMS
5 – outgoing call
6 – configuration information (only in case of restart)

*2) Y.cmd:
B ... alert
A ... alarm
Q ... reset
P ... pulse
N ... non-freezing
number ... regulation
(-- if two or more cases are true, only the highest one will be saved (E.g. if Regulation, non-freezing and Pulse are true, only P will be saved.)

*3) A1:
O … disconnected;
Z … short circuit;
? … unknown (After turning on, device doesn´t communicate)

*4) ALM1, ALM2:
E.g. On, off, alarm, alert

5.6 Backup battery

SP11 has backup **Li-Ion battery**, that allows **SP11** work without external power supply.

6. Control

6.1 Control via SMS message (COMMAND)

SP11 is controlled via SMS message in GSM network. Those SMS messages must be in format:
<PASSWORD> <COMMAND> [<COMMAND>]...between password and command must be space.
Example:
`1234 STATE` … send message about device´s state.

`1234 ON` … switch on output Y1 (If output number isn´t specified, device will switch on output with the lowest number) and confirms switching on via SMS message.

`1234 Y1 ON` … switch on output Y1 and confirms it via SMS message.

`1234 Y4 PULSE 10 NOBACK` … switch on output Y4 for 10sec (then switch it off), but will not send SMS message.

`1234 Y4 PULSE` … switch on output Y4 for 10sec, because it was last entered value.

`1234 Y4 RESET` … switch off output Y4 for 4sec (4sec are set by default).

`1234 Y1 TEPL 20` … Output will regulate heater to 20°C, through temperature sensor selected in SeaConfigurator.

Is possible to put multiple commands in one message all at once:
1234 Y1 ON Y2 TEPL 20 Y3 PULSE

Output names (Y1, Y2, Y3 etc.) and state names (ON, TEPL, PULSE etc.) can user define in program SeaConfigurator. Command SMS message can look like this:
1234 GATE OPEN STOVE HEAT 20 LAMP BLINK 4

6.2 Status SMS message

Whenever the command SMS contains valid password the ***SP11*** send back Status message. Attached states in answers can be disabled in SeaConfigurator. Only those states which aren´t disabled in field next to inputs/outputs „Mention in status message" are mentioned in status SMS message.

Examples of status message	Explanation
Water works:	Name of station
Gate=open	Input 1 is ON
Heater=heats (16/20'C)	Input 2 in ON after temperature reach 20°C Input 2 will be OFF.
Lamp=glows	Output 3 in ON
SIGNAL=58%	GSM Signal strenght

6.3 Control via SeaConfigurator (PC with WIN)

You can control outputs and watch state of SP11 in tab „Monitor" in configuration program **SeaConfigurator**.

6.4 Control using CML (for Smart phones)

This application can use smartphones with Android or iOS. Application makes easier control of ***GSM rele***[5] and state monitoring. You can download this application from Google Play or Apple Store for free, type into search „**CML SEA**". After installing the application, make the first registration, take a photo of the QR code of the device into the "paring code". The QR code you find in the ***GSM-SP11***[5] package.

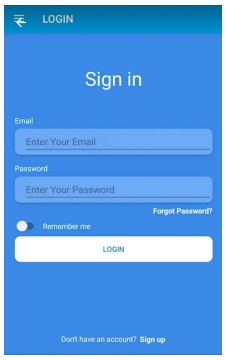
GET IT ON Google Play

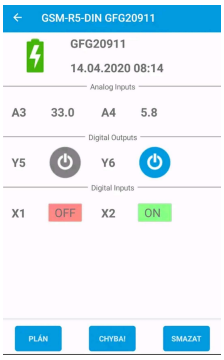
Download on the App Store

WARNING: For the functionality of the CML application, it is necessary to have an activated data tariff on the SIM card, which is inserted in the device. Transferred data can be charged by the operator according to the tariff agreed by you.

6.4 Enable CML

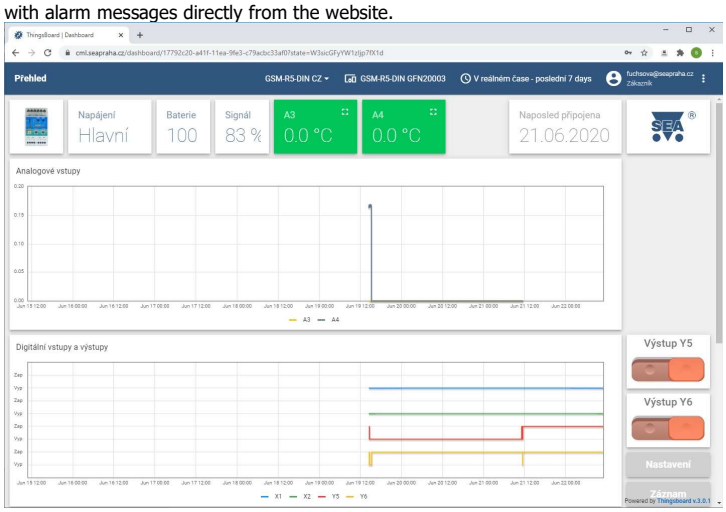
The CML function must be switched on in the GSM-Configurator in „Station settings", press the edit button in the „CML" line and check „Enable" in the CML window.





6.5 On-line data on a website

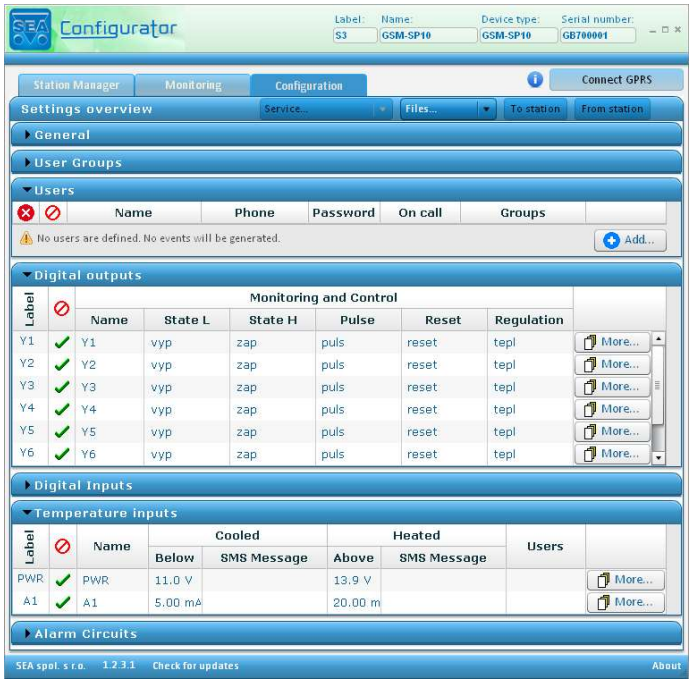
You can monitor the measured values, including the history, and display them clearly on the **cml.seapraha.cz** website. You can also control the outputs or set up e-mails with alarm messages directly from the website.



7. Configuration

Program **SeaConfigurator** is designed for local and remote configuration and for local and remote monitoring of SP11.Local configuration and monitoring is provided through USB cable and remote configuration and monitoring is provided through GPRS data connection. Latest version of **SeaConfigurator** can be downloaded for free from www.seapraha.cz (in search type in „Configurator").

Preview of configuration screen in SeaConfigurator:



7.1 Configuration via SMS messages

Some important parameter can be configurated by special configuration SMS messages.

Caution!

When configurating via SMS is important to understand that´s only change of parameters and it will not match with configuration saved in PC.

7.1.1 Reset to factory settings

`1234 FACTORY` … resets SP11 to factory settings

7.1.2 Restriction for number of sent messages

`1234 !LIMITSMS p d` … restriction (p-**number**) of SMS sent in specified amount of time (**d**ays).

Sets restriction for number of sent SMS messages and calling in specified amount of time. First parameter specifies allowed number of outgoing SMS messages and second one specifies amount of time in days. When exceeds limit of sent SMS messages device will send one more message about exceeding limit to master. After expiration of specified amount of time and restoring function no SMS message will be send. Supressed SMS messages and calls will be lost. Current settings can be find by command „**1234 !LIMITSMS ?**". Default setting is **!LIMITSMS 70 7**, or max 70 SMS messages per 7 days. Counter resets when new configuration is uploaded from **SeaConfigurator**.

7.1.3 User – sending SMS (disable/enable)

This SMS message is useful in case when user change his phone number or users are changed.
`1234 USER DIS +420123456789` … disable user with phone number +420.. from controlling SP11.
`1234 USER EN +420123456789` … enable user with phone number +420.. user can control SP11.

7.1.4 User – controlling SP11 (disable/enable)

This SMS message can be useful when you need to disable user (temporarily) from controlling SP11.
`1234 CODE DIS 1234` …disable user with password 1234 from controlling SP11.
`1234 CODE EN 1234` … enable user with password 1234 control SP11.

7.1.5 Disable/enable event from input/output

This SMS is useful in case when some failure appears (E.g. input malfunction), which will cause sending many warning SMS messages. Parameter which can be changed/set via SMS message are in **SeaConfigurator**.
`1234 X1 !DIS` … disable events for input X1

7.1.6 Pre-setting GPRS connection

Parameters, which can be change/set via SMS message are in **SeaConfigurator** marked with SMS symbol in yellow field (pictures below). Clicking on symbol will display window with hint and with text of configuration SMS message.

Hints for configuration SMS messages are part of **SeaConfigurator´s** SMS in yellow field.

7.2 Explanation of important terms

PIN (Personal Identification Number – usually 4 digits) = SIM card can use only users who know PIN (in case when PIN usage in activated on the SIM card). PIN usage can be deactivated. Insert SIM card into your phone a deactivate PIN using manual of the phone (PIN can be usually deactivated in Menu ⇨ Security ⇨ PIN).

PASSWORD = Password must be included in SMS commands, configuration and monitoring of SP11.SP11 accepts only SMS with valid password. Password is also required for connecting SP11 with PC (through USB cable or remotely via data connection in GSM network). Factory password is „**1234**".

EVENT = Change of state on digital input or transition of analog value between two present zones. SP11 can react on events by different actions, if they were set in configuration. SP11 can send SMS message or call on specified phone numbers.

ACTION = It is one voice call or SMS message to one user or internal COMMAND. Every EVENT can cause multiple ACTIONS.

COMMAND= Is send via SMS message to device or it can be summoned as ACTION when EVENT occurs. This kind of command is called internal COMMAND and same rules apply for it like for COMMAND in SMS message (Only it doesn´t has password in front of it.).
LIST OF USERS =List of all users and their phone numbers, which are used in ACTIONS. User names are used for better organization. SP11 doesn´t use those names.

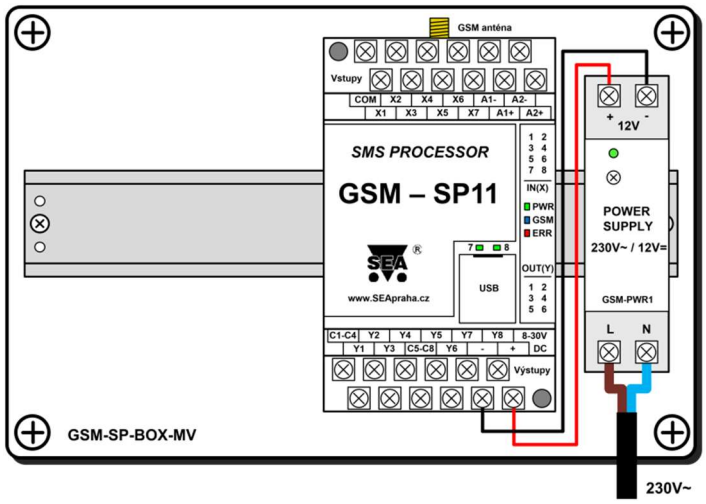
DEVICE SHUTDOWN = Disconnect SP11 from all sources of energy (from external power supply and internal battery).

DEVICE STARTUP = Connect SP11 to power source. From perspective ofSP11 it doesn´t matter if device is powered from internal battery or external power supply.(Note: reset of the SP11´s processor means start-up for SP11).

POWER supply TURN ON/OFF = connecting/disconnecting SP11´s power supply clamps from external power supply (Note: Because SP11 has internal battery, it can be configurated in case of connecting/power failure of the power supply, device will send this information through SMS message.).

8. SP11 in box

SP11 can be fitted into **small box** (GSM-SP-BOX-MV). This box has power supply 230VAC/12VDC, 15W (GSM-PWR1).This solution counts with additional installation of extension for analog and digital inputs TGSM-SP-EXP on left side of SP11. On the top of the box is SMS panel connector for antenna connection.



Dimensions of small box:
Protection class: IP55

External dimensions:

width:	166 mm
height:	140 mm (without through holes and antenna connector)
depth:	150 mm

Into the box next to the external power supply and SP11 can fit also GSM-SP-EXP or 8 pcs of relay in socket. If you need to more space you can use **big box** (GSM-SP-BOX-VV).

Possible problems and their solution

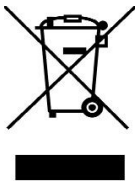
Problem description	Problem reason	Solution
Typical problems during installation of the SP11: **SP10after installation (during first use) seems permanently unavailable in GSM network.**	Disconnected / turned off power supply	Check power supply for SP11. Note: SP11 is not powered from USB cable!
	broken / yet inactive SIM card	Put SIM card into your phone to check functionality
	depleted credit on pre-paid SIM card	Check credit status on pre-paid SIM card.
	PIN blocked SIM card (must be unblocked by PUK).	Check PIN usage for SIM card in SIM card settings.
	Test phone call is redirected into voice mail.	Cancel phone call redirection and cancel notification when calling to different GSM network.
	Weak GSM signal.	Check GSM antenna. Check GSM signal quality where SP11 is placed. (E.g. You can check it with your Phone with SIM card from same GSM provider. Your phone should have in place where GSM antenna is located at least two signal strength bars.).
		Tip: Call *22# to find how much credit is on the SIM card. For Vodafone cards *101# For Twist - T-Mobile *104*# For GO - O2 *161*# For BleskMobil (O2)
Typical problems during running of SP11: **Suddenly SMS sending from SP11 stops permanently work.**	Depleted credit on pre-paid SIM card.	Recharge credit
	SIM card expirated: GSM provider require SIM card credit recharge after some time (approx. 1 year).	contact GSM provider for SIM card reactivation.
	Different reason	Insert SIM card from SP11 into your phone and try to send SMS message. If you still can´t send SMS, contact your GSM provider. (Check if you have right settings for service centre phone number (SCA)). You can figure out reason of your problem from LED signalization on SP11´s front panel.
Typical problem during SP11 remote configuration via GPRS	New SIM card doesn´t have activated GPRS.	Ask GSM provider to activate GPRS data for SIM card in SP11.
Ringing from SP11 when event occurred can´t be cancelled by denying.	Too short time of dialling/ringing in configuration.	Extend times in configuration „restrict dialling time", „restrict ringing time"

9. Frequently Asked Questions (FAQ)

1. What is necessary to use the SP11 successfully?
   - SIM card must allow receiving/sending SMS messages from phone, incoming and outgoing voice calls and GPRS data. Before using SIM card in SP11 is necessary to solve all issues (or with help from your GSM provider).
   - Good GSM signal strength in place where SP11 will be located (at least 2 two signal bars on your phone). Problem with insufficient GSM signal can be often solved by using different type of GSM antenna. Which will be placed on proper spot. Antenna will be connected to SP11 by coax cable with SMA terminal.
   - Enough credit (in case of using pre-paid SIM card).
   - Cancel all phone call redirections and automatic notifications from GSM provider before call connection (E.g. about calling to different GSM provider network).
2. What is (SCA Service Centre Address) number of my GSM provider? (In case when SMS sending from SP11 doesn´t work)
   In present time we have those service centres in Czech Republic:
   - +420 608 005681 - Vodafone
   - +420 603 052000 - T-Mobile
   - +420 602 909909 - Telefónica O2
3. I wanted to try functionality of SP11 with my own SIM card. After that I can´t find my SMS messages, which were located on SIM card before.
   - SMS messages were processed by SP11 and then deleted. Probably because they were analysed as syntactically incorrect.
4. Where can I find more information?
   - More information you can get on www.seapraha.cz.

10. Warranty

General warranty period is 12 months after purchase, when eventual malfunction device will be repaired free of charge in SEA company while shipping to SEA is paid by customer and SEA pays for shipping back to customer. For SW there is 24 months warranty under following conditions:



Both CPU and PC software is sold "as is". The software was created by the best software engineers in SEA and was carefully tested both in SEA and also by SEA customers using GSM applications products made in SEA. In spite of making all possible to get error free software it can happen, that the software in CPU or PC programming SW or their mutual interaction has some error under some specific conditions. If such error is found and the description of the problem including configuration file is sent by E-mail to SEA ltd., the error is removed free of charge and SEA will send new SW by E-mail to customer.

SEA ltd. has NO RESPONSIBILITY for any damage, lost, costs and any other problems direct or inducted, caused by such SW error, by eventual device malfunction from any reason or by undelivered SMS from the device.

The manufacturer, seller or installation company is not responsible for the amount of transferred data, connections, telephone calls, sent SMS, MMS, or other charged services of GSM network operators and is not responsible for the amount of fees for GSM network operators of the installed SIM card. Nor is it liable for the energy consumed by the equipment it controls or for any other damage.

Main company residence is complaint place:
SEA spol. s r.o.
Dolnoměcholupská 1537/21
102 00 Praha 10, tel. 272700058

CE Declaration of conformity

in accordance with the Radio and Telecommunications Terminal Equipment Directive 1999/5/EC (R&TTE) and Directive 2011/65/EU (ROHS).

We SEA, spol. s r.o., Dolnoměcholupská 1537/21, CZ 102 00 Praha 10, Czech Republic, **ID**: 47117931 (**manufacturer**)
declare under our sole responsibility, that product device for remote control and monitoring type GSM-SP11 is in conformity with the following standards:

health and safety:	EN 62368-1:2004
EMC:	EN 61326-1:2013
radio frequency:	EN 301 511 v12.5.1, EN 301 489-7 v1.3.1
ROHS:	EN 50581:2012

The last two digits of year in which the CE marking was affixed: 19

CE

Place of issue: Praha
Date of issue : 1.9.2019

Name: Ing. Vladimír Rosůlek
Grade: director

SEA s.r.o. (2)
Společnost pro elektronické aplikace
Dolnoměcholupská 21/96
CZ - 102 00 PRAHA 10 - Hostivař
tel.: 2 727 [illegible] fax: 2 727 014 18
IČO: 47117931 DIČ: CZ47117931