



# Poseidon2 family manual

*Poseidon2 is a product family for use in remote monitoring and for measuring over LAN.*

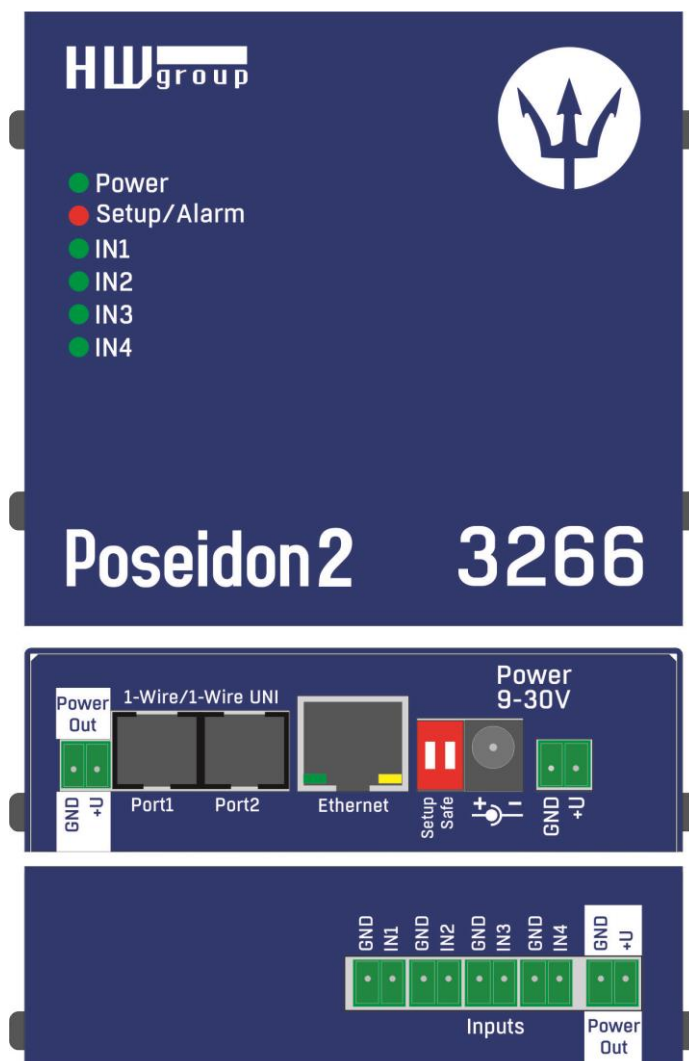
*The family consists of several product versions, designated for use in different environments (19" rack cabinets, data centres, switchboard cabinets, ..). Specific models vary in number and types of sensors it can connect, otherwise the devices offer identical features.*

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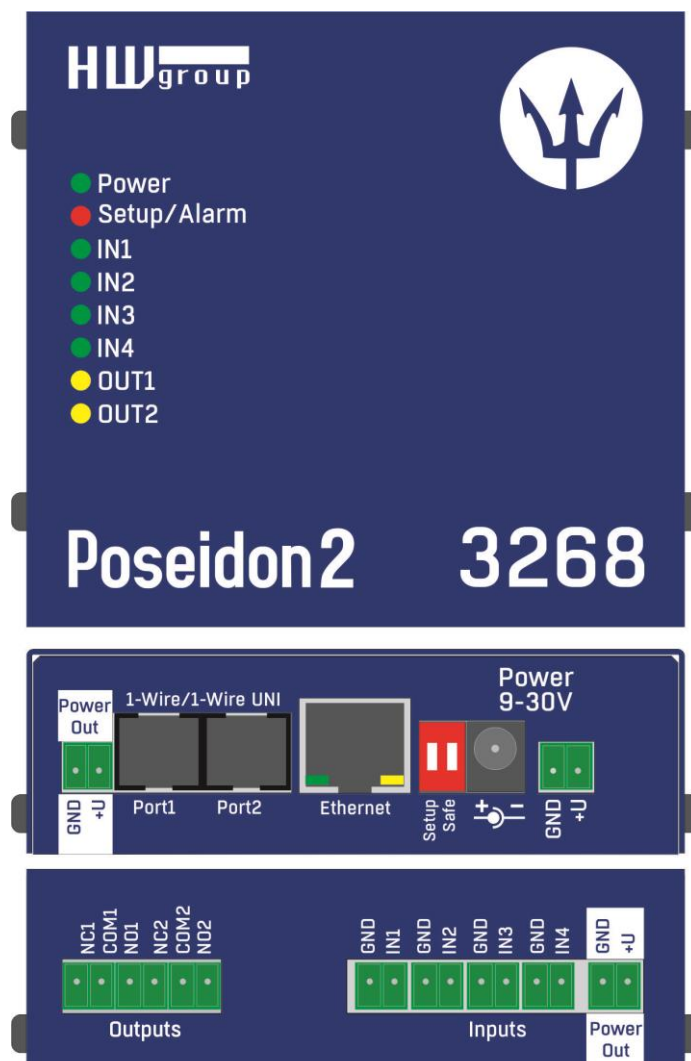
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# Poseidon2 devices

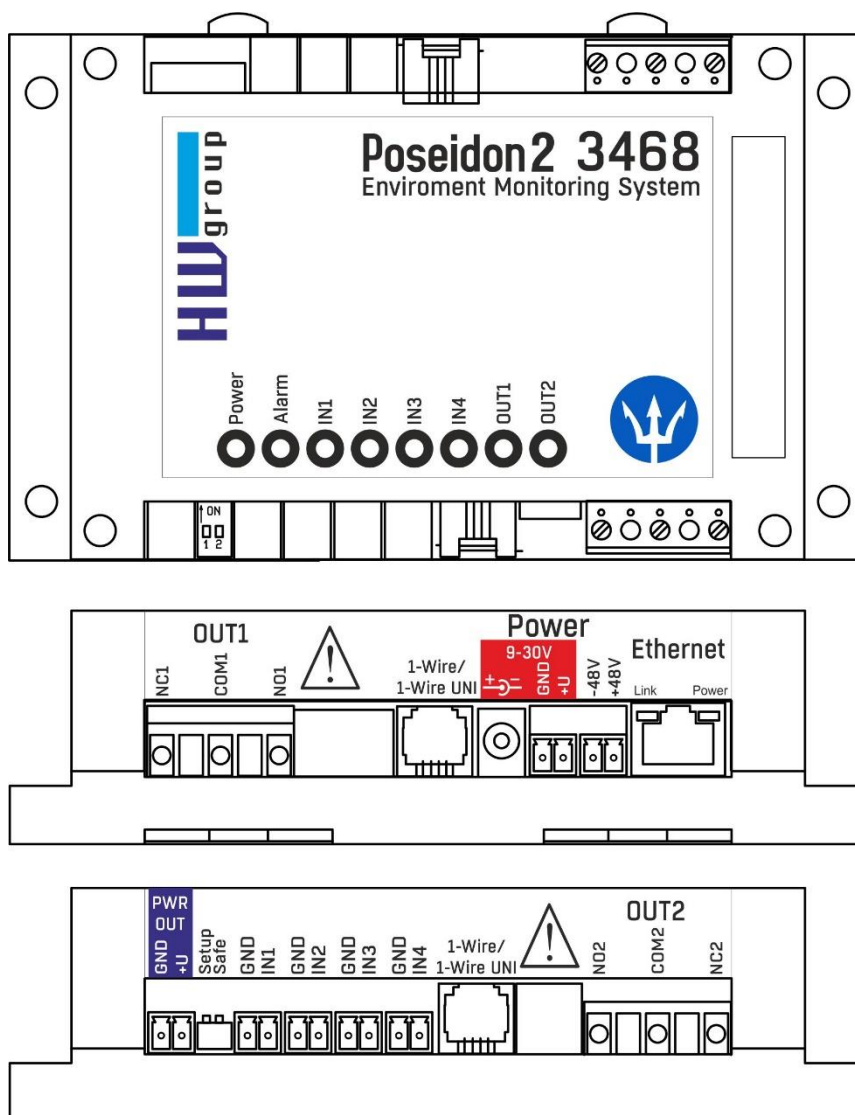
## Poseidon2 3266



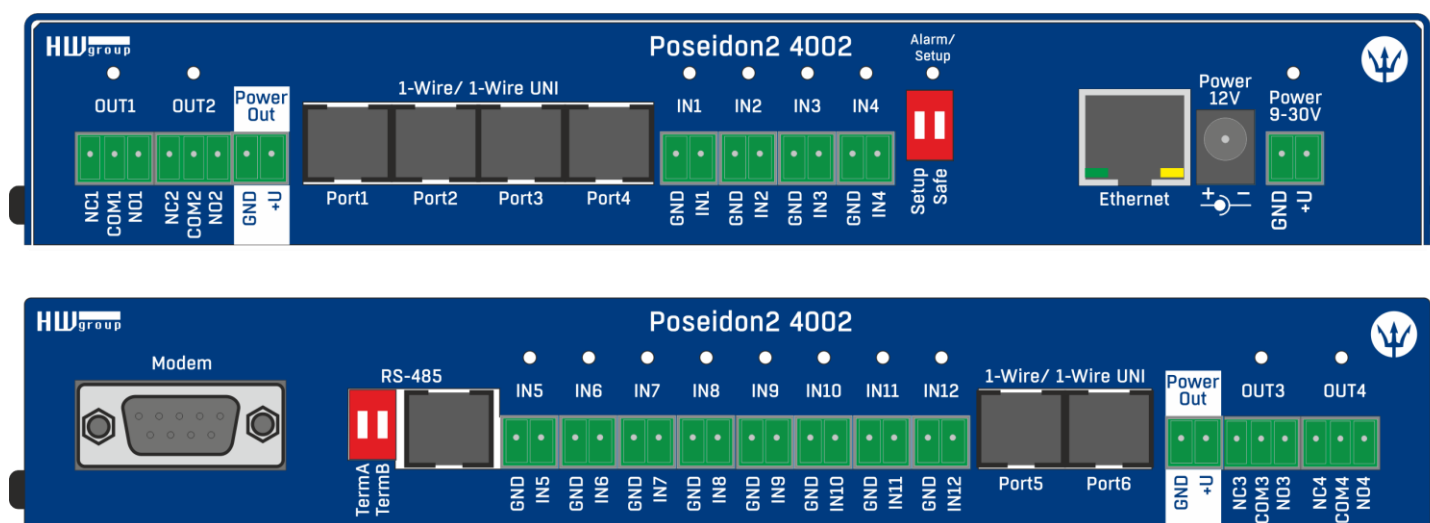
## Poseidon2 3268



## Poseidon2 3468



## Poseidon2 4002



## Comparison of specific models

	Poseidon2 3266	Poseidon2 3268	Poseidon2 3468	Poseidon2 4002
Ethernet	100 Mbit	100 Mbit	100 Mbit	100 Mbit
VLAN	future	future	future	future
HTTP	✓	✓	✓	✓
DHCP	✓	✓	✓	✓
SNMP v1	✓	✓	✓	✓
SNMP v2/3	future	future	future	future
SNMP Trap	✓	✓	✓	✓
Trap destinations	5	5	5	5
SNTP	✓	✓	✓	✓
SMTP	✓	✓	✓	✓
SMTP TLS	✓	✓	✓	✓
E-mail Destinations	5	5	5	5
SSL	future	future	future	future
SMS/ Local RS-232	✗	✗	✗	✓
SMS/ netGSM	✓	✓	✓	✓
SMS Destinations	5	5	5	5
Logger	✓	✓	✓	✓
Logger records	250.000	250.000	250.000	250.000
HWg-Push protocol	✓	✓	✓	✓
IPv6	future	future	future	future
Comm monitor	✓	✓	✓	✓
DO Local conditions	✓	✓	✓	✓
1-Wire sensors	8	8	8	16
1-Wire UNI support	✓	✓	✓	✓
RS-485 support	✗	✗	✗	✓
RS-485 sensors	✗	✗	✗	24
M-BUS meters	✗	✗	✗	✗
Modbus /TCP	✓	✓	✓	✓
Email Alarm reminder	✓	✓	✓	✓
Email Periodical Status	✓	✓	✓	✓
Power Input 1	9-30V	9-30V	9-30V	9-30V
Power Input 2	--	--	48V DC	--
DI (Digital Inputs)	4	4	4	12
DO (Digital Outputs)	0	2	2	4
DO max load	--	50V/1A	230V/10A	50V/1A
Operating temperature	-30-85°C	-30-85°C	-30-50°C	-30-85°C

## Connectors description

### Ethernet

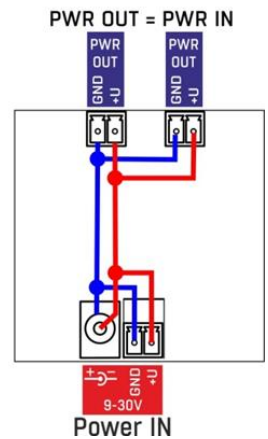
Ethernet 100Base-T (10/100Mbit). After connecting the adapter a green "Link" LED shows correct connection and yellow "Activity" LED flashes

### Power

Green LED light shows that the device is powered-up. Power supply in range 9-30V is required, for Poseidon2 3468 it is 48V. Modules can be manufactured in PoE versions for use in specific projects

### PowerOut

Can be used as a power supply for connected sensors and accessories. PowerOut output is directly connected to 9-30V input. Power outputs on units that require 48V can be used as a 12V/300mA power supply.



### 1-Wire/1-Wire UNI

Connecting HWg sensors with 1-Wire/1-Wire UNI interface. Each port can directly connect up to 60m bus. 2 Wire UNI sensors. More in chapter **Connecting the sensors**

### RS-485 (only Poseidon2 4002)

For connecting RS-485 HWg sensors. TermA and TermB switches are used for bus termination. More in chapter **Connecting the sensors**

### Inputs

INx - Inputs for connecting dry contacts. All inputs have one common GND potential. Green LED light shows that the input is triggered.

### Outputs

OUTx – relay outputs with switch contacts. Clamps connected in normal state are NCx (Normally closed) + COMx (Common), NOx (Normally Open) + COMx when the relay is switched. Yellow LED light shows that an output is switched.

### Alarm/Setup LED

Red LED shows the device state - Light indicates alarm state (some sensors or inputs out of their safe range), flashing indicates that the device is in TCP or Serial Setup.

### DIP1/DIP2 system switches

DIP1 - Serial setup mode activation / Factory default settings switch. Factory default settings can be restored by switching the DIP1 3x within 5 seconds after connecting the power adapter.

DIP2 - Safe mode - Switching the DIP activates HWg settings protection. No settings can be changed.

# Poseidon2: first steps

## 1) Connecting the cables

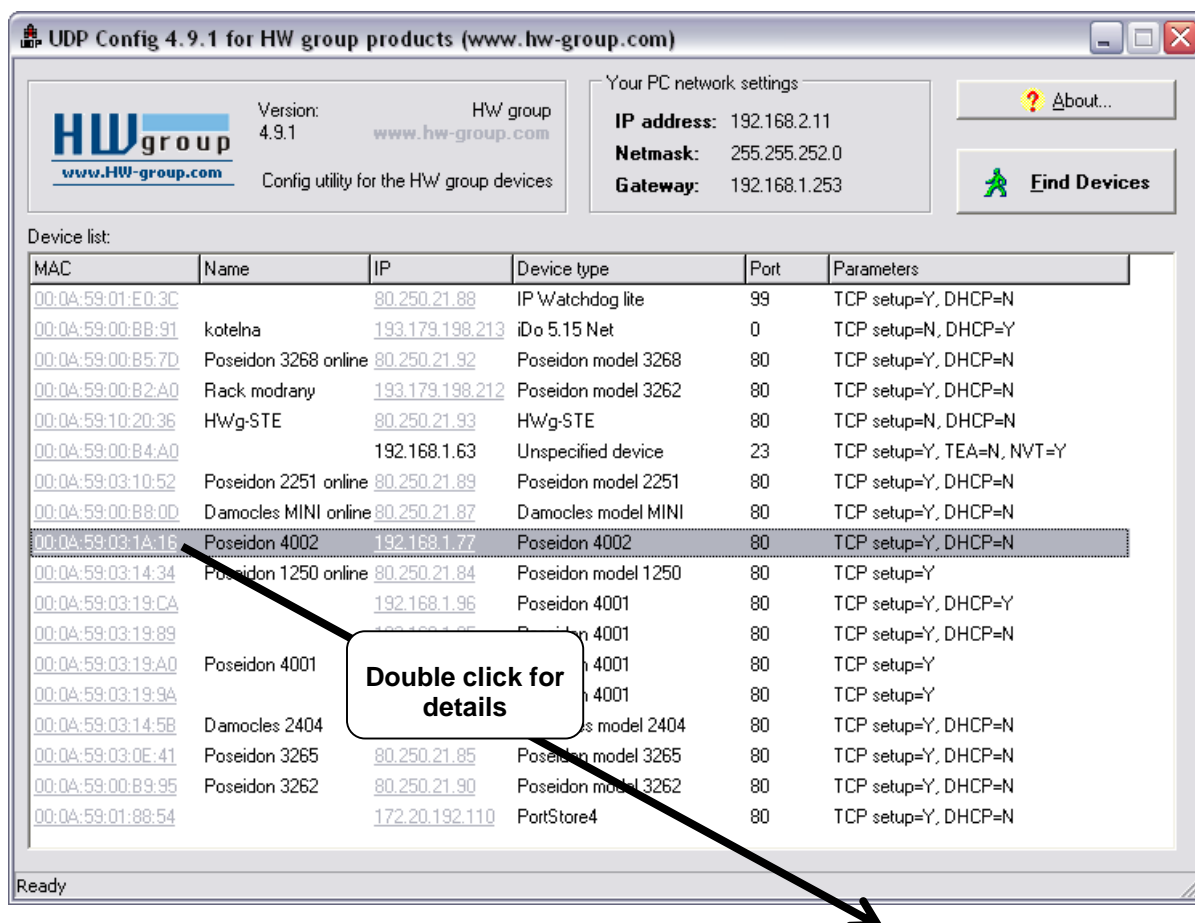
- Turn the unit and write down its MAC address that is printed on the label on the side.
- Set the switches: **DIP1=Off**, **DIP2=Off**.
- Connect the unit to the Ethernet (with a patch cable to a switch, cross-over cable to a PC), RJ-45 port.
- Plug the power adapter into a mains outlet and connect it to the Poseidon2 power input.
- The green **POWER** LED lights up.
- If the Ethernet connection works properly, the **LINK** LED lights up after a short while, and then flashes whenever data are transferred (activity indication).

## 2) Configuring the IP address – UDP Config

**UDP Config** utility – root directory of the supplied CD (Windows and Linux versions).

Available for download at [www.HW-group.com](http://www.HW-group.com) Software > UDP Config.

- Click the icon to launch **UDP Config**. The program automatically looks for connected devices.
- Automatic device discovery works only in the local network.
- Individual Poseidon2 units are identified by their MAC addresses (on the label at the bottom).
- Double-click a MAC address to open a basic device configuration dialog.

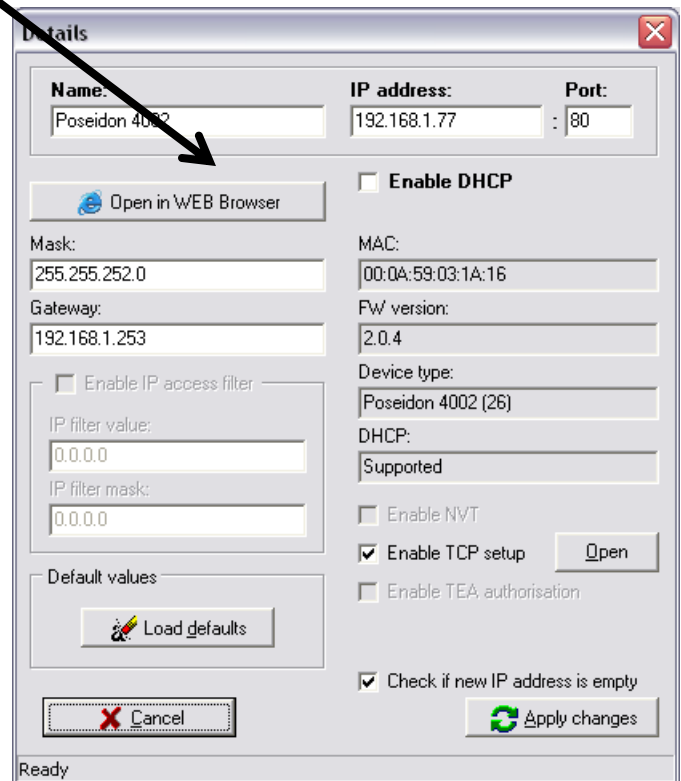




## Configure the network parameters

- IP address / HTTP port (80 by default)
- Network mask
- Gateway IP address for your network
- Device name (optional)

Click the **Apply Changes** button to save the settings.



The screenshot shows the 'Details' configuration window for the Poseidon2 device. The window is titled 'Details' and has a red close button in the top right corner. It contains several input fields and checkboxes. The 'Name' field is set to 'Poseidon 4002'. The 'IP address' field is set to '192.168.1.77' and the 'Port' field is set to '80'. The 'Mask' field is set to '255.255.252.0' and the 'Gateway' field is set to '192.168.1.253'. The 'MAC' field is set to '00:0A:59:03:1A:16' and the 'FW version' field is set to '2.0.4'. The 'Device type' field is set to 'Poseidon 4002 (26)' and the 'DHCP' field is set to 'Supported'. There are checkboxes for 'Enable DHCP', 'Enable IP access filter', 'Enable NVT', 'Enable TCP setup', and 'Enable TEA authentication'. The 'Enable TCP setup' checkbox is checked. There is also a checkbox for 'Check if new IP address is empty' which is checked. Buttons for 'Open in WEB Browser', 'Load defaults', 'Cancel', and 'Apply changes' are present. An arrow points from the 'Configure the network parameters' section to the 'Name' field.

Alternatively, you may use the following utilities to configure the IP address:

- **UDP Config for Linux**

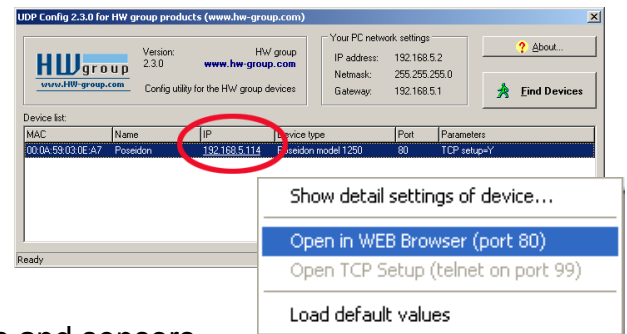
### Important:

- To reset the device to factory defaults, toggle DIP1 several times within 5 seconds after applying power to the device.
- No configuration changes can be stored while DIP2=On.  
To change the IP address, set DIP2=Off.



## 4) WWW interface of the device

- To open the WWW interface of the device:
  - Enter the IP address into a web browser
  - Click the IP address in UDP Config
  - Click the underlined IP address in UDP SETUP
- The WWW page displays current states of devices and sensors.



## Web interface of the device

- **General:** Overview of current readings
- **General Setup:** IP address, DNS, security (user name/password)
- **SNMP:** SNMP / SNMP Trap configuration (ports and alarm recipients)
- **E-mail:** Configuration and test
- **GSM & RFID:** Configuration and test in order to use a remote SMS-GW
- **Log & Time:** Time configuration, NTP server
- **Portal:** Connection to a remote portal system
- **Sensors:** Device name, sensor names, status overview
- **Inputs:** Control of inputs and alert parameters
- **System:** Firmware upgrade, save/restore configuration, etc.



**Poseidon**

General

- General setup
- SNMP
- Email
- GSM
- Log & Time
- Portal
- Sensors
- Inputs
- Outputs
- System

Reload values every 10 [s] Stop  
Values reloaded 493

### Poseidon2 4002

GENERAL

#### Dry Contact Inputs

Name	ID	Current Value	Alarm Alert
Binary 1	1	0(Off)	Active if on
Binary 2	2	0(Off)	Active if on
Binary 3	3	0(Off)	Disabled
Binary 4	4	1(On)	Disabled
Binary 5	5	0(Off)	Disabled
Binary 6	6	0(Off)	Disabled
Binary 7	7	0(Off)	Disabled
Binary 8	8	0(Off)	Disabled
Binary 9	9	0(Off)	Disabled
Binary 10	10	0(Off)	Disabled
Binary 11	11	0(Off)	Disabled
Binary 12	12	0(Off)	Disabled
Comm Monitor 1	123	1(On)	Disabled

#### Relay Outputs

Name	ID	Current Value	Mode
BinOut 1	151	0(Off)	Manual
BinOut 2	152	0(Off)	Manual
BinOut 3	153	0(Off)	Manual
BinOut 4	154	0(Off)	Manual

#### Sensors

Name	ID	Current Value	Safe Range	Hysteresis	Alarm Alert
Sensor 240	47636	11.7 % RH	10.0.. 60.0	0.0	Email and SNMP trap
Sensor 241	53270	13.2 % RH	10.0.. 60.0	0.0	Email and SMS
Sensor 242	56342	10.4 % RH	10.0.. 60.0	0.0	EMAIL
Sensor 243	65285	0 %	0.0.. 100.0	0.0	SNMP trap
Sensor 244	41496	31.1 °C	10.0.. 60.0	0.0	Disabled
Sensor 245	47130	27.3 °C	10.0.. 60.0	0.0	Disabled
Sensor 246	50202	32.6 °C	10.0.. 60.0	0.0	Disabled

#### Download

SNMP Management Information Base: [MIB](#)

SNMP Object Identifier: [OID](#)

XML Schema Definiton: [XSD](#)

For more information try <http://www.hw-group.com/>

#### Terminal Config (TCP Setup)

Connect with telnet to: [192.168.6.6 Port 99](#)

User-defined names for sensors and digital inputs

Alarm thresholds

Action when value out of range

MIB file for SNMP softwares

## General Setup

**Poseidon2 4002** GENERAL SETUP

**Device**  
Name:

**Network Settings**  
 IP Address:   
 Submask:   
 Gateway:   
 Primary DNS:   
 Secondary DNS:   
 HTTP Port:   
 TCP Telnet Setup:   
 DHCP Client: ☒

**IP Access Filter**  
 Access to: HTTP, SNMP  
 IP Address Value:   
 IP Mask Range:

**Other settings and information**  
 Display temperature in:   
 System temperature in:   
 HW Security Protection:

**User Passwords**  

	User Name	Password
Read Only:	<input type="text"/>	<input type="text"/>
Read Only + Outputs:	<input type="text"/>	<input type="text"/>
Read and Write:	<input type="text"/>	<input type="text"/>

Apply Changes

Device name, e.g. "First floor 1"

Three levels of passwords for device security.

## SNMP

**Poseidon2 4002** SNMP

**General SNMP Settings**  
SNMP Port:

**SNMP Access**  

Community	Read	Write	Enable
public	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
private	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

**SNMP Trap Destinations**  

Destination	Community	IP Address	Port	Enable
A.	public	192.168.1.242	163	<input type="checkbox"/>
B.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
C.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
D.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
E.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>

**MIB II System Group**  
 SysContact:   
 SysName:   
 SysLocation:

Apply Changes

5 destinations for SNMP Traps

## E-mail

**Poseidon2 4002** EMAIL

**Email Settings**

SMTP Server:   
 SMTP port: 25  
 Email Sender Address:   
 Authentication: ☒  
 Secure TLS mode: ☐  
 Name/Password:  /   
 Email Subject Text: Pokus

**Email Destinations**

Alarm Email Recipient:   
 Alarm Email Copy:   
 Alarm Email Copy:   
 Alarm Email Copy:   
 Alarm Email Copy:   
 Periodic Log Recipient:

**Test Email**

State: 250 2.0.0 Ok: queued as 5084922021E

**Periodic Status Settings**

Periodical Status: ☐ Period: 5 [minutes]  
 Alarm reminder: ☐ Period: 3 [minutes]

Send Test Email

Apply Changes

## Periodic Status Settings

- Periodical Status

When on, sends an e-mail with device status at the specified intervals. For example every 24 hours (1440 minutes).

- Alarm reminder


When active, sends periodic reminders that the device is in the Alarm state. For example every 15 minutes.

## To send e-mail, check:

- 1) Correct **Gateway IP** address
- 2) **DNS server** in network settings
- 3) **SMTP server** and port
- 4) **Authentication** turned on, correct **user name** and **password**
- 5) **Spam filter** for your mailbox is disabled

**NOTE:** Configuration changes must be confirmed by clicking the Apply Changes button.

# GSM



General

General setup

SNMP

Email

**GSM**

Log & Time

Portal

Sensors

Inputs

Outputs

System

Apply Changes

Poseidon2 4002

GSM

Serial Port Settings

Port Function: Disabled

SOAP Destination

SOAP Server	Link /Path	Port	Enable
A. 192.168.1.36	service.xml	80	<input checked="" type="checkbox"/>

GSM SMS Interface

GSM Function: Remote  
SMS + Ring When Alarm: ☐  
RS-232 GSM Module: Not enabled  
SMS Center Number:  
Remote Destination: Remote Server A

GSM SMS Recipients


Alarm SMS Recipient 1:	
Alarm SMS Recipient 2:	
Alarm SMS Recipient 3:	
Alarm SMS Recipient 4:	
Alarm SMS Recipient 5:	

Send Test SMS

IP address of "HWg-SMS-GW" to use for sending text messages (SMS)

Recipients' phone numbers

# Log & Time



General

General setup

SNMP

Email

GSM

**Log & Time**

Portal

Sensors

Inputs

Outputs

System

Apply Changes

Poseidon2 4002

LOG AND TIME

Date and Time

Current Date: 22.01.2014  
Current Time: 19:32:23

Time Synchronization

SNTP Server: time.nist.gov [IP Address or DNS Name]  
Time zone: +1hour

Synchronize Time

Device Logger Settings

Log period: 60 [s]  
Logfile capacity: 16days, 11hours and 11minutes  
Report Log Period: 24 [h]  
Erase log after e-mail: ☒

Open log File

Clear log File

Press to synchronize the time with the specified server

Interval for logging measured values

Expected size of recorded data

## Portal

**Poseidon2 4002** PORTAL

**Portal Message**

Message from the portal

[SensDesk.com: Check sensor online.](#)

**Portal**

Portal Enable: ☒  
 Push Period: 30 [s] 0=Disable  
 Server Address:   
 IP Port: 80 Default 80  
 User Name:   
 Password:   
 Current Push Timer: 8  
 Current Log Timer: 8  
 Current Autopush Block Timer: 0  
 Manual Push:

**Sensors autopush config**

Name	ID	Current Value	Autopush
Sensor 240	47636	12.3 %RH	0.0
Sensor 241	53270	14.1 %RH	0.0
Sensor 242	56342	10.7 %RH	0.0
Sensor 243	65285	0 %	0.0
Sensor 244	41496	30.0 °C	0.0
Sensor 245	47130	25.9 °C	0.0
Sensor 246	50202	31.9 °C	0.0

**Dry Contact Inputs autopush config**

Name	ID	Current Value	Autopush
Binary 1	1	0(Off)	<input type="checkbox"/>
Binary 2	2	0(Off)	<input type="checkbox"/>
Binary 3	3	0(Off)	<input type="checkbox"/>
Binary 4	4	1(On)	<input type="checkbox"/>
Binary 5	5	0(Off)	<input type="checkbox"/>
Binary 6	6	0(Off)	<input type="checkbox"/>
Binary 7	7	0(Off)	<input type="checkbox"/>
Binary 8	8	0(Off)	<input type="checkbox"/>
Binary 9	9	0(Off)	<input type="checkbox"/>
Binary 10	10	0(Off)	<input type="checkbox"/>
Binary 11	11	0(Off)	<input type="checkbox"/>
Binary 12	12	0(Off)	<input type="checkbox"/>
Comm Monitor 1	123	1(On)	<input type="checkbox"/>

Configures the communication with the portal using the HWg-Push protocol. Poseidon2 is the active side and establishes the connection periodically and/or whenever a change in a sensor value exceeds the configured AutoPush value.

The [www.SensDesk.com](http://www.SensDesk.com) portal connection parameters are filled in.

### AutoPush configuration

Poseidon2 connects to the portal and notifies a value change whenever a change in the sensor reading exceeds the configured AutoPush value.

This configuration only applies to the communication between Poseidon2 and the online portal. Local alarm values are configured in the portal.

#### For portal connection, check:

- 1) Correct **Gateway IP** address
- 2) **DNS server** in network settings
- 3) Correct **Server Address** of the portal

## Sensors

**Poseidon2 4002**

**Sensors**

Range of allowed values. If exceeded, alarm is signaled.

Sends a **SNMP trap** if the "Safe Range" for this sensor is exceeded

Sensor name will be shown in e-mails, text messages, or SNMP traps

Sends an **E-mail** if the "Safe Range" for this sensor is exceeded

Find 1Wire + RS485 sensors

Find 1Wire sensors

Scans connected sensors and displays detected sensors

Sends a **text message (SMS)** if the "Safe Range" for this sensor is exceeded

Apply Changes

Sensor ID	Code	Value	Safe Range	Hysteresis	Delay [s]	SNMP Trap	Email	SMS
Sensor 240	12.0 %RH	10.0 .. 60.0	0.0	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Sensor ID: 53270	Sensor 241	14.1 %RH	10.0 .. 60.0	0.0	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sensor ID: 56342	Sensor 242		10.0 .. 60.0	0.0	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sensor 243		0.0 .. 100.0	0.0	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sensor ID: 41496	Sensor 244	30.0 °C	10.0 .. 60.0	0.0	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sensor ID: 47130		25.9 °C			0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sensor ID: 50202		32.0 °C			0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

After connecting sensors or changing RJ11 connections, sensors need to be detected again.

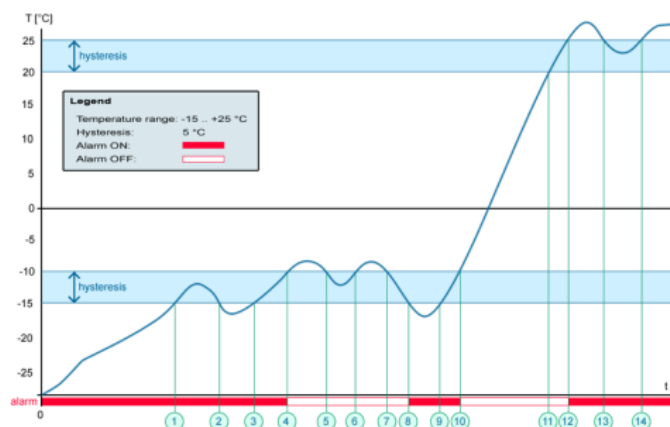
To avoid numerous false alerts (by e-mail or SMS) whenever the reading fluctuates around the threshold, you can use:

1) **Hysteresis Idle Range**

Tolerance band around the "Safe Range". Prevents multiple alarm alerts.

2) **Delay [s]**


Delays the information about alarm beginning and alarm end by a specified time. Can be used for dry contacts, too.



**Tip:** For details, see the complete "Poseidon family" manual.

**NOTE:** Configuration changes must be confirmed by clicking the Apply Changes button.

## Inputs



# Poseidon

## Poseidon2 4002

### INPUTS

### Dry Contact Inputs

Name	ID	Current Value	Alarm State	Delay [s]	Out of Safe Range SNMP Trap	Out of Safe Range Email & SMS
Binary 1	1	0(Off)	Active if on ▼	5	<input type="checkbox"/>	<input type="checkbox"/>
Binary 2	2	0(Off)	Active if on ▼	5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Binary 3	3	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>
Binary 4	4	1(On)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>
Binary 5	5	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>
Binary 6	6	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>
Binary 7	7	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>
Binary 8	8	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>
Binary 9	9	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>

Enter Digital Input name, will be shown in e-mails, text messages or SNMP traps

**ALARM CONTACT STATUS:**

- **Active if On**  
Alarm when the contact closes (1 = On)
- **Active if Off**  
Alarm when the contact opens (0 = Off)
- **Disabled**  
No Alarm

**Reaction to digital inputs:**

- **Disabled**
- Send a **SNMP Trap**
- Send an **E-mail**
- Send a **SMS**

General

General setup

SNMP

Email

GSM

Log & Time

Portal

Sensors

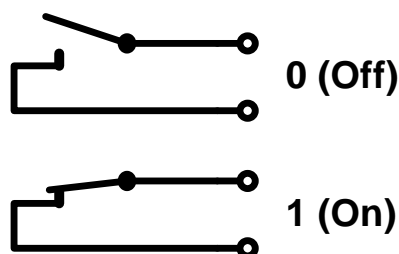
**Inputs**

Outputs

System

Apply Changes

## Connecting the inputs



## FAQ

- Poseidon2 informs about alarm activation and deactivation for each Digital Input and/or sensor.
- E-mail format cannot be changed; sensors may have custom names.
- Yellow background in a line with a sensor or an input means that the safe range is exceeded but alarm notification is off.

**NOTE:** Configuration changes must be confirmed by clicking the Apply Changes button.

## Outputs



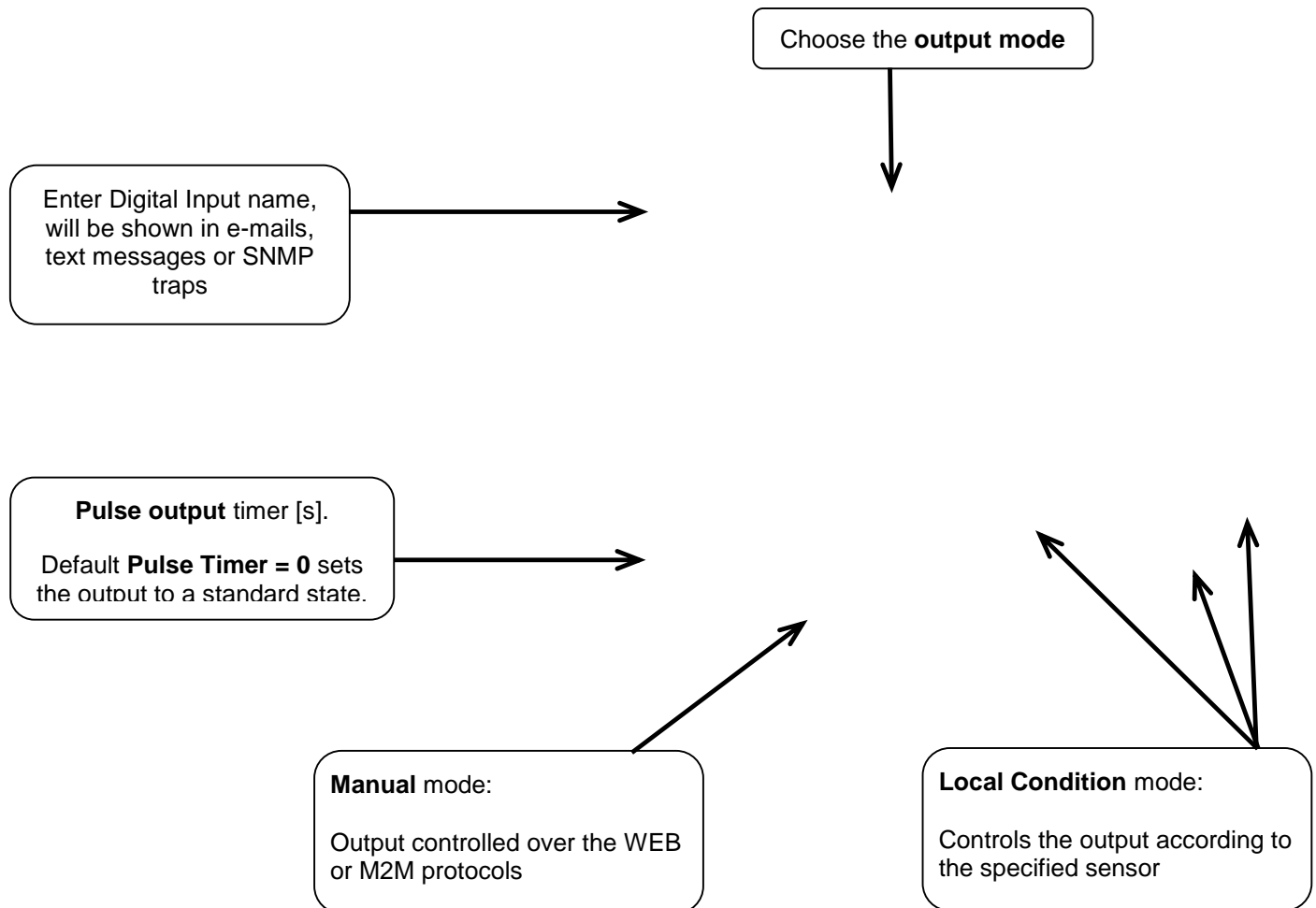
# Poseidon

## Poseidon2 4002

### OUTPUTS

### Relay Outputs





**Pulse Timer –** After clicking this option the output will switch for a defined time.  
 Pulse Timer = 0 function inactive *Details can be found in the manual in chapters about WEB interface.*

### Output mode:

#### A) **Manual**

Output can be controlled using the Web interface or externally using M2M protocols. The output cannot be used in “thermostat” mode – local condition.

#### B) **Local Condition**

The output cannot be controlled over the Web, it is controlled by the local condition. The output is read-only for all M2M protocols. Hysteresis in the sensor settings applies.

Outputs cannot be controlled via web or M2M protocols in **Local Condition** mode.

- **On if any alarm**  
The output is active if at least one input or sensor is in alarm.
- **On if value equal to Trigger**  
The output is active if the selected sensor reading is **equal to** the “Target Value”.
- **On if value higher than Trigger**  
The output is active if the selected sensor reading is **greater than** the “Target Value”.
- **On if value lower than Trigger**  
The output is active if the selected sensor reading is **less than** the “Target Value”.
- **On if Alarm on**  
Output = On, if the selected sensor or input is in an Alarm state.

- **Dependent On** – sensor / input to which the condition applies.

## System

**Poseidon2 4002** SYSTEM

**Communication Monitor**

Modbus: ☐ XML/HTTP: ☐ SNMP: ☐ Time:  [s]

Monitors communication with a device based on all selected protocols. Virtual Input "Comm Monitor 1(123)" sets to 0 in case there was any traffic using all selected protocols within the defined time.

**Configuration**

Load Configuration:  Soubor nevybrán.

Save Configuration:

**System**

Uptime: 11days,20hours, 13minutes

Factory Default:

Device FirmWare: 1.2.7

Restoring factory defaults

Uploads new firmware from the PC

### Communication Monitor

This function is useful e.g. to send a warning e-mail whenever Poseidon2 ceases to be periodically monitored over SNMP or SCADA.

This function controls a virtual Digital Input that is available in **Inputs** as "Com Monitor 1" with an ID of 123. If no communication took place in the specified time using the selected protocols, it sets "Com Monitor 1" = 0 (Off).

If three protocols are selected, all 3 conditions must be met for the OK state.

### Configuration

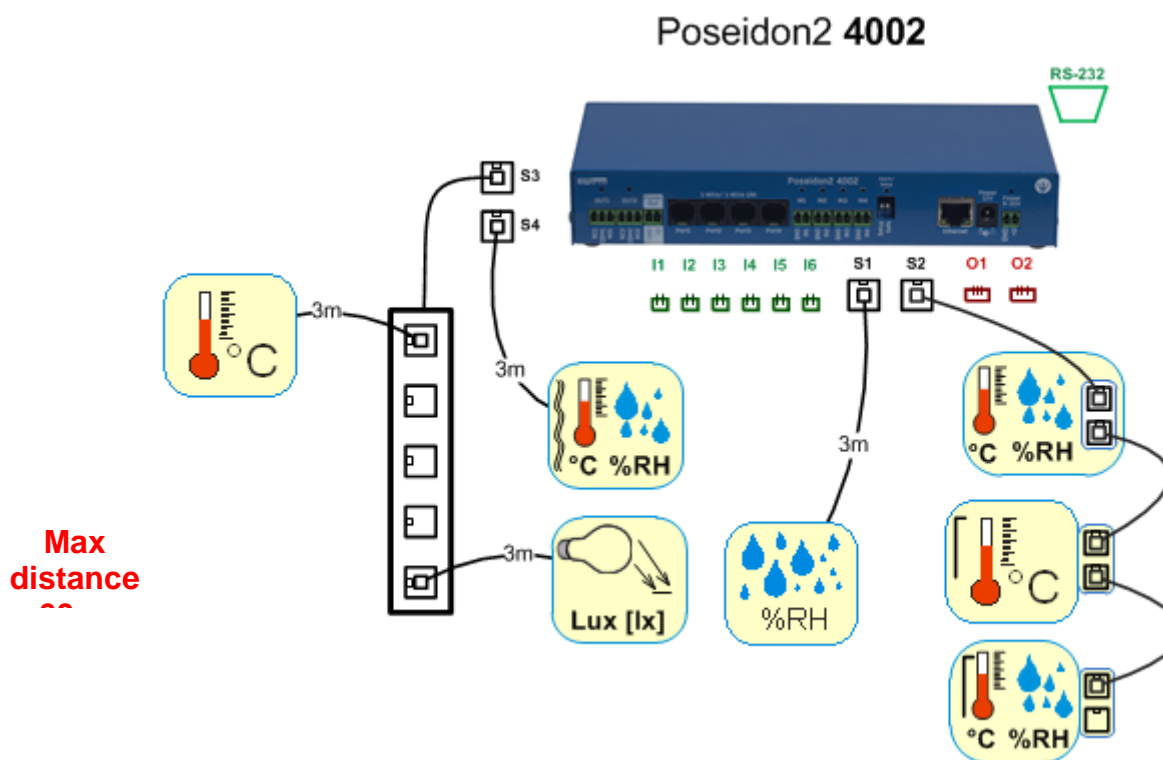
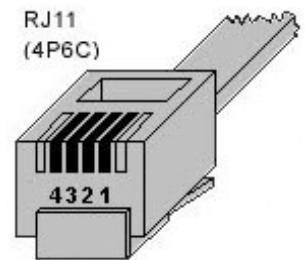
- Download – Retrieve the configuration from the device and store it on the PC.
- Upload – Send a saved configuration from the PC to the device.

**NOTE:** Configuration changes must be confirmed by clicking the Apply Changes button.

# Connecting the sensors

## 1-Wire Bus (RJ11) sensors

- Connect the sensor before powering up the Poseidon - **the connector must click in.**
- **Max distance per active port is 60m.**
- Sensors can be daisy-chained.
- Sensors can be also connected using a star topology with the T-Box (TBox2) hub.
- After any change in the connected sensors an autodetection has to be run again. (WWW interface > Sensors > **Autodetect sensors** )



## RS-485 (RJ45) sensors

*Industrial bus for connecting sensors over longer distances*

- Connect the sensors before powering up the unit.
- Sensors can be daisy-chained, or connected to a virtual star using the “**S-Hub**” unit.
- **Terminate the RS-485 line** with a 120  $\Omega$  to 470  $\Omega$  terminator. Some sensors (e.g. Temp-485) contain a built-in terminator controlled with a jumper or a DIP switch (TERM = ON). See the sensor manual.
- Check or set the sensor address. Each sensor on the RS-485 bus must have **an unique address**. The address (ID) is expressed as a letter (A..Z / a..z) or a number (65..122). The numbers correspond to the ASCII codes of the letters, A=65, Z=90, a=97, z=122. More details on setting up the address in sensor manuals.
- After any change in the connected sensors an autodetection has to be run again. (WWW interface > Sensors > **Autodetect sensors** )



Sensors are shipped with non-conflicting addresses whenever possible. The preset address is written on the label.

*Note: A particular sensor is identified by its RS-485 address. Sensors with the same address can be swapped without the need for a new detection.*

# Common features of Poseidon2 family

## Displayed readings options

- The Poseidon2 unit displays current readings from all connected sensors.
- Dry contact inputs are scanned approximately every 200ms.
- Values from all sensors on both buses (RS-485 and 1W bus) are read in a single loop that repeats once per second; however, the actual time needed to read the sensors may vary from 1 to 30 seconds
- All values are in the “integer/10” format, range is  $\pm 999.9$ .
- **A value of 999.9** is out of range for all supported sensors and indicates that the sensor was not found.
  - If you have disconnected or replaced a sensor, run sensor autodetection, or remove the sensor from the list.
  - When the Poseidon2 unit is overloaded with network requests (as is sometimes the case, for example, with our public online demo), -999.9 can sometimes appear even though the sensor works properly. This is due to limited computing performance of the unit. Try to reduce the load.
- Units are assigned to values automatically according to the detected sensor type. Supported units include:
  - Temperature: °C, °K, °F  
(please note that Safe Range thresholds can be set in °C only)
  - Humidity: %RH
  - Voltage: V, current: A or mA
  - Other units: %, etc...

## Input / sensor in alarm state

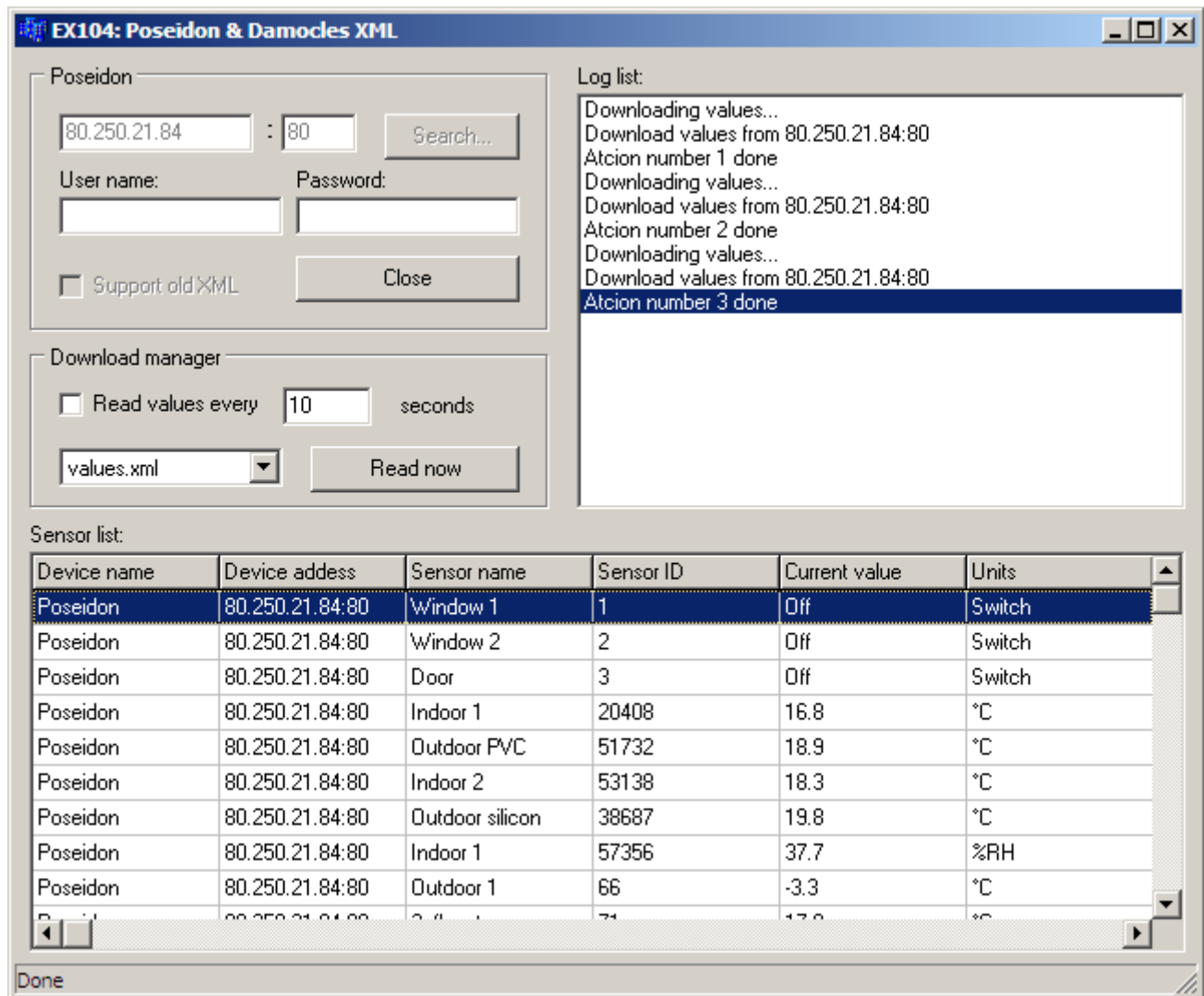
- Alarm state can be set independently for every input (contact) / sensor.
- For a sensor, “Alarm” occurs whenever the reading is outside of the specified Safe Range, as long as alarm alerting is enabled for at least one notification method (SNMP / e-mail & SMS).
- **Response to a sensor being disconnected**
  - -999.9 is displayed
  - The value evaluates as an “Alarm” (reading out of the specified Safe Range). If alarm alerting is enabled for the given sensor, e-mail or SNMP trap is sent.

### TIP

- More information about data formats, variables identification and SDK can be found in **Thorough Poseidon family manual**.

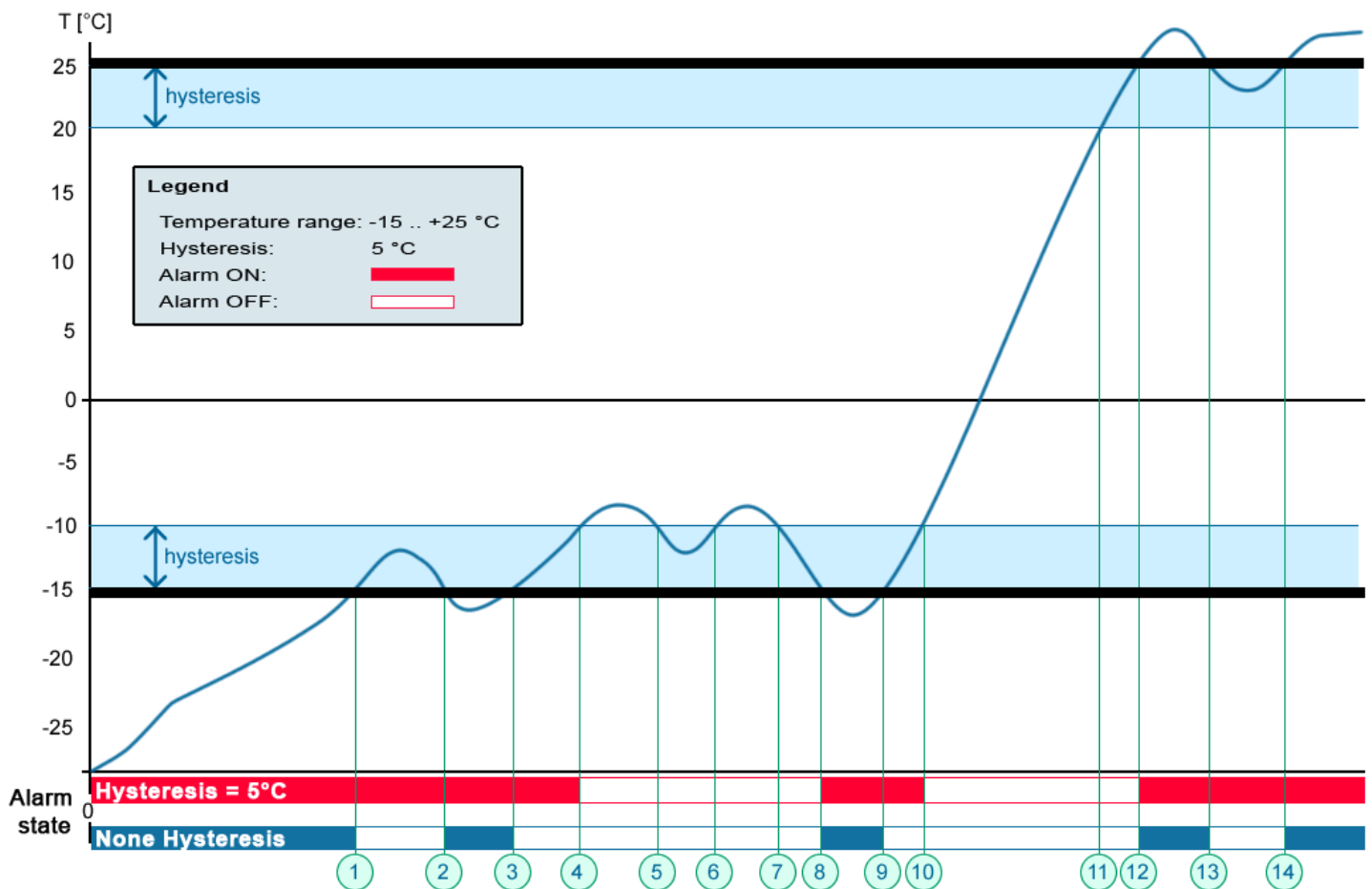
## Calibration

- Each sensor can be calibrated by specifying a linear offset. The calibration value can be written over XML. For calibration settings use the **Calibrator utility (For download on Poseidon 2250 websites)** or EX104 from HWg SDK (menu can be opened by a right-click).
  - Calibration value = +3 → sensor measures 0,5°C → Poseidon shows +3,5°C
  - Calibration value = -3 → sensor measures 0,5°C → Poseidon shows -2,5°C
  - Calibration value = -10 → sensor measures 27% RH → Poseidon shows 17% RH



## Sensor hysteresis

The **Hysteresis** setting defines a tolerance band for alarm alerts. This feature prevents multiple alarm alerts if the reading oscillates around the specified threshold. See the graph for an explanation.



Without a hysteresis of 5°C, the alarm raised at **point 8** would end at **point 9**. With the hysteresis function, the alarm continues until the temperature rises above the tolerance band (**point 10**), that is,  $5^{\circ}\text{C} + (-15^{\circ}\text{C}) = -10^{\circ}\text{C}$ .

- **Hysteresis = 5°C:** The unit sends **3 e-mails (SMS)**  
Alarm at points **0..4, 8..10, 12 and beyond**
- **No hysteresis (0°C):** The unit sends 8 e-mail (SMS) messages Alarm active in points **0..1, 2..3, 8..9, 12..13, 14 and beyond**



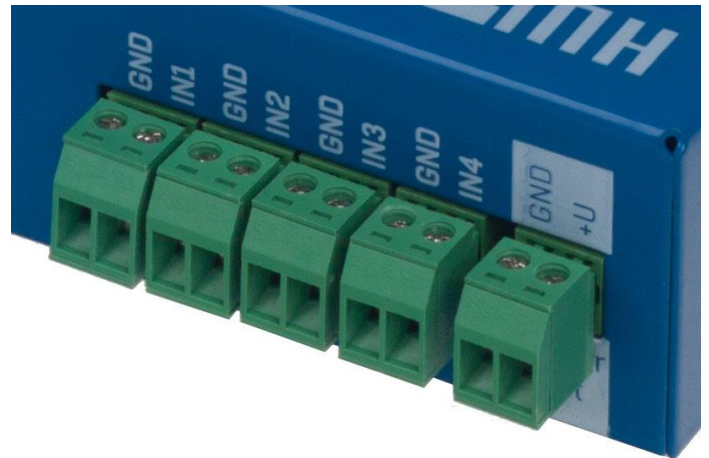
# Supported interfaces (in details)

## Dry Contact Inputs

Dry contacts can be connected to the clamps. For example Door contact.

The inputs are electrically connected to the power supply.

- Unconnected inputs read as “**0 (Off)**”.
- Activated inputs (closed contacts) read as “**1 (On)**”, resistance against the Common pin must not exceed 500Ω.



### Connection parameters:

- **Maximum wiring length:** 50 m
- **Supported sensors:** Any contact without external voltage (dry contact)
- **Per-input alarm settings:**
  - Alarm inactive
  - Alarm when the contact is opened or closed
  - Alarm whenever the contact is open
- **Possible alarm responses:** Common setting for all inputs
  - No response
  - Alarm alert sent as a SNMP trap
  - Alarm alert sent by e-mail or text message (SMS)
  - Alarm alert sent as a SNMP trap as well as by e-mail or SMS
- **Polling period:** 800 ms
- **Range of sensor IDs:** Inputs use ID addresses from 1 to 9
- **Sensor names:** Sensors can be named using up to 12 characters
- **Disconnected sensor detection:** None, disconnected sensor reads as “**0 (Off)**”.

## RJ11 – 1-Wire bus

Digital bus from company Dallas Semiconductor, each sensor has its own unique ID.

We recommend to keep the total wiring length under **60m**, although functionality has been achieved over tens to hundreds of meters in experimental settings.

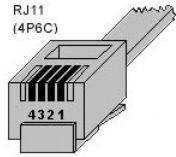
If the wiring connected to one connector of the Poseidon2 unit is longer than approximately 60m, we **cannot guarantee error-free operation**, as it greatly depends on the actual wiring implementation, topology and environment.



### Active / Passive 1W port

**Active** is RJ11 connector on a Poseidon2 device. Full max length and power supply is guaranteed for all 1-Wire UNI/1-Wire sensors. If you move a connected sensor from one active port to another, the sensor will be shown as disconnected. After connecting, run sensor autodetection again.

**Passive port** is an RJ11 connector on T-Hub or an RJ11 connector on a sensor (for daisy-chaining). Cannot guarantee full length and power supply for following sensors. Power supply issues can be resolved by using 1-Wire hub Power.

RJ11		
		
1	-	Not used
2	<b>Data</b>	Transmit Data
3	<b>GND</b>	Ground
4	<b>+5V</b>	Power

### 1-Wire UNI (RJ11)

1-Wire **UNI** is a software extension of 1-Wire bus.

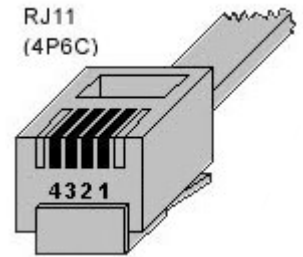
- **1-Wire UNI sensors:**
  - Illumination sensor
  - Sensor 4-20mA
  - Sensor 0-60V (-48V DC)
  - Sensor 0-30A AC
  - [>> More sensors](#)
- **Maximum wiring length:** 60 meters total length per each active RJ11 port  
**Note:** Length can be limited by some 1-Wire UNI sensors or by using more RJ11 male-female connectors.
- **Power to sensors:** 5V/20 mA from RJ11 connectors (can be boosted by "1-Wire hub Power")



Other parameters are identical with 1-Wire

## 1-Wire (UNI) bus

- **Supported sensors:** Only new sensors supplied by HW group
- **1-Wire UNI:** Software extension "UNI" show other than temperature or humidity sensors.
- **Communication cable:** 4-wire phone cable
- **Polling period:** 800 to 10 seconds
- **Sensor address assignment:** Automatic, each sensor has a unique address
- **Disconnected sensor detection:** Yes, disconnected sensors read as "-999.9"
- **Alarm if sensor is disconnected:** If the sensor is set to alarm whenever its reading is outside of the safe range, disconnection triggers the alarm



- **1-Wire bus accessories**

- [Poseidon T-Box](#) - Hub for 5 1-Wire / 1-Wire UNI sensors
- [1-Wire hub Power](#) ([photo](#)) - hub + additional power supply for 8 1-Wire / 1-Wire UNI sensors
- [Poseidon T-Box2](#) ([photo](#)) - Hub for 2 1-Wire / 1-Wire UNI sensors



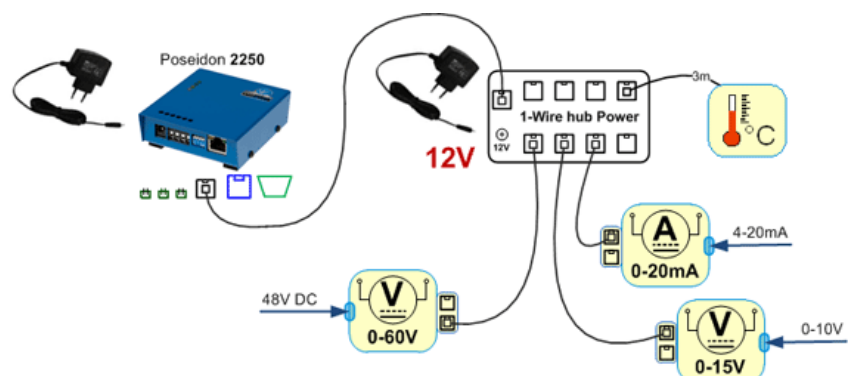
**Remember:**

*All 1Wire bus sensors have their unique serial numbers. These are stored with sensor names during autodetection and expressed using the sensor IDs. If you change the sensors on the bus, you must re-run **Autodetection** in the Flash SETUP.*

## Special accessories for the 1Wire bus

### 1-Wire hub Power – Power booster + Hub for 8 sensors

- **1x Input:** 1-Wire bus
- **1x input:** 12VDC power
- **8x output:** 1-Wire bus
- **Compatible with**  
**1-Wire and 1-Wire UNI bus.**



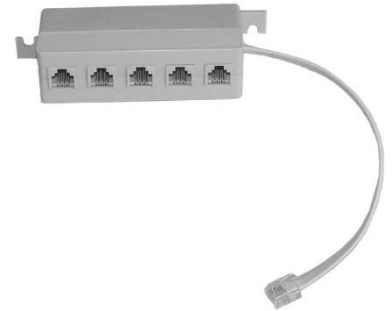
### **Poseidon T-Box2** – Hub for 2 sensors

- **Cable length:** 1m
- **Maximum number of connected sensors:** 2
- **Connectors:** RJ11
- **Bus type:** 1-Wire bus



### **Poseidon T-Box** – Hub for 5 sensors

- **Cable length:** 10cm
- **Maximum number of connected sensors:** 5
- **Connectors:** RJ11
- **Bus type:** 1Wire bus



### **Poseidon Spider** – Bridges 1-Wire bus to RS-485

- The Spider connects to the Poseidon2 over the Industrial bus (RS-485)
- Spider unit can connect **4 sensors** over **1-Wire bus**
- Spider supports **ONLY sensors for temperature, humidity and dry contact inputs.**
- Each sensor is connected to a separate connector and may be located **up to 25m** away.
- **Maximum number of connected sensors:** 4x 1-Wire
- **Sensor types:** 1-Wire bus (1-Wire) (Does not support 1-Wire UNI)
- **Connects to:** RS-485



#### **Caution:**

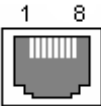




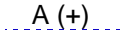



*The Poseidon2 unit warranty explicitly excludes failures caused by connecting sensors made by other manufacturers or with excessively long wiring.*

## RJ45 - RS-485

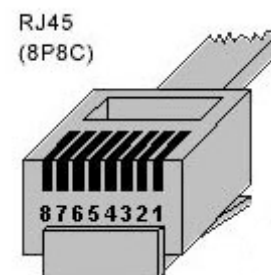
The RS-485 bus can be used to connect up to 31 sensors over up to 1000m, even in industrial environments. For convenience and ease of use, TP cables and RJ45 modular jacks are used to wire the RS485 industrial bus.

The **RS-485 bus** uses the **blue pair** of wires (pins 4 and 5), labeled A and B. The **brown pair** (pins 7, 8) is used to supply 12V to **power the sensors**.

If you use the S-Hub unit and the B-Cable module, the **green pair** of wires (pins 3, 6) is used for the **return RS-485 connection**. The green pair of wires is not connected at the Poseidon2 4002 unit.

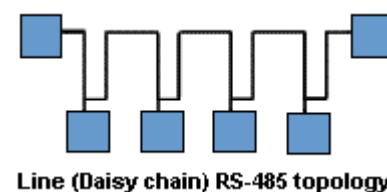
Port 1 – RJ45		
		
1		Not used
2		Not used
3		485 B return
4		RS-485
5		
6		485 A return
7		Ground
8		Power

- **Maximum wiring length:** Up to 1000m in total
- **Supported sensors:** temperature, humidity, current, voltage sensors and others (more in Sensors overview in our product list)
- **Number of sensors on the RS-485 bus:** Up to 31 physical sensors
- **Power:** 12V/120 mA, available at the RJ45 jack. Power supplied by the bus is sufficient for up to 3 external sensors, an **S-Hub** can be added to power more sensors
- **Communication cable:** Twisted 2-wire UTP, eventually 4-wire phone cable
- **Alarm settings:** Monitoring of the measured values (SafeRange)
- **Polling period:** 800 ms to 10 s (depending on the number of sensors, 10 seconds for 41 sensors)
- **Sensor address assignment:** Manual, each sensor must have a unique address (see sensor manual)
- **Range of sensor IDs:** Sensors use IDs from 48 to 122, the address corresponds to the ASCII code of 0..9, A..Z, a..z characters.
- **Disconnected sensor detection:** Yes, disconnected sensors read as “-999.9”
- **Alarm if sensor is disconnected:** If the sensor is set to alarm whenever its reading is outside of the safe range, disconnection triggers the alarm



### General RS-485 characteristics

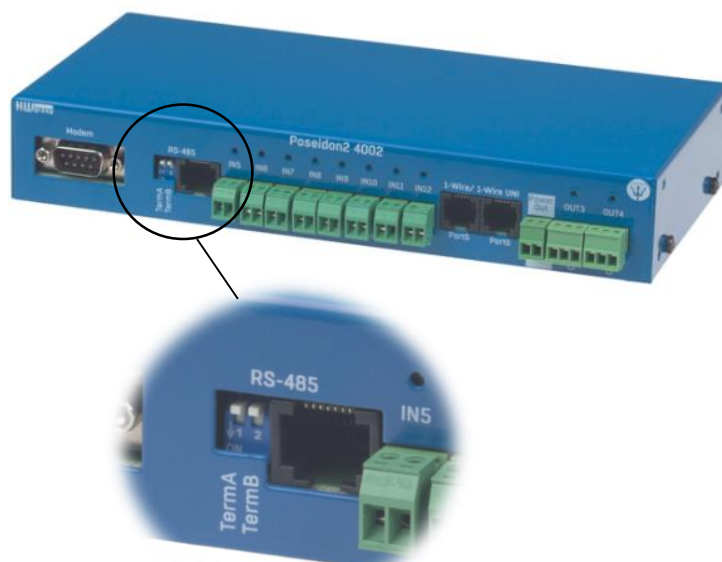
- Maximum wiring length 1000 m
- Up to 32 devices on the bus (Poseidon unit + 31 sensors)
- High resistance to noise in industrial environments
- Daisy chain topology is necessary (as opposed to star topology)
- Each device must have a unique address
- Wire polarity must be respected
- Line must be terminated at the beginning and at the end



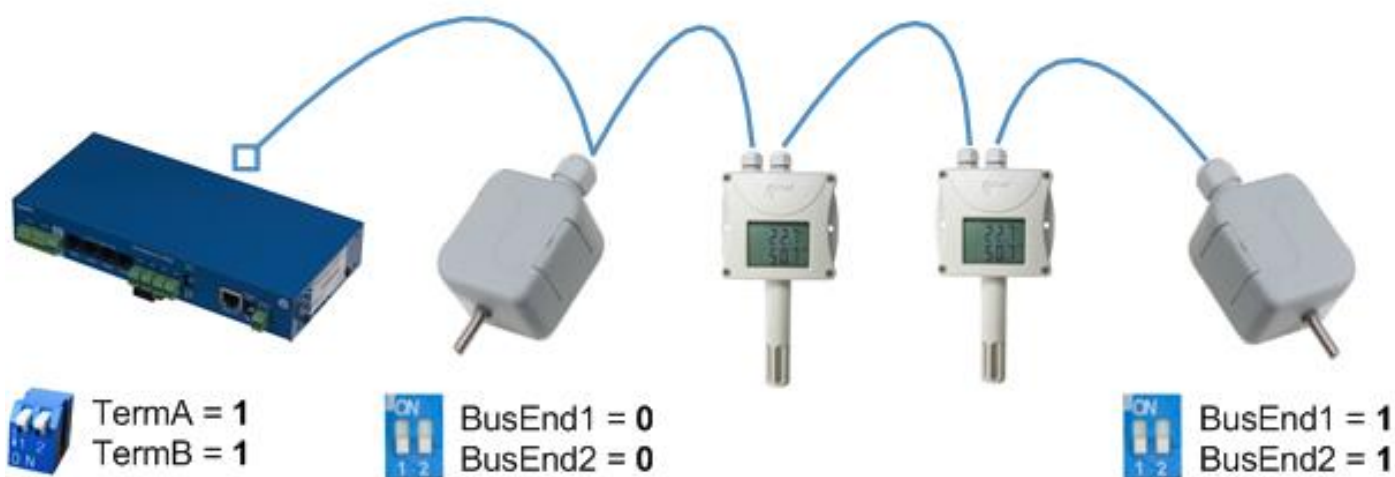


## RS-485 termination on the side of Poseidon2

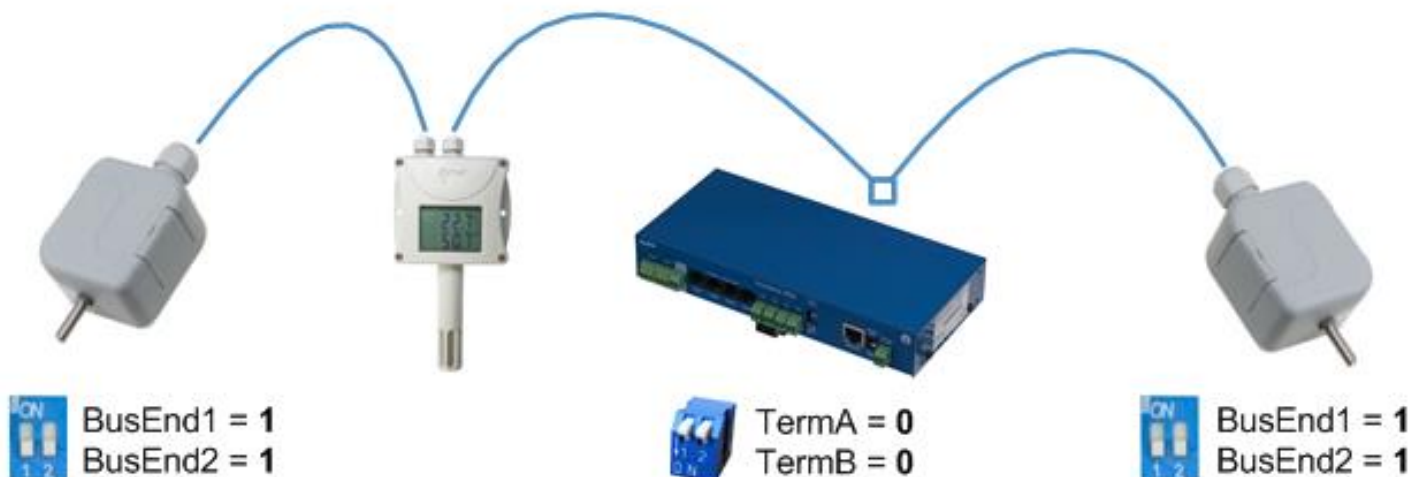
Poseidon2 4002 units are equipped with two DIP switches (TermA and TermB) for RS-485 bus termination.



## Poseidon2 4002 at the start of RS-485 line



## Poseidon2 4002 in the middle of RS-485 line



## Termination of RS-485 bus

The RS-485 bus must be terminated at its end. The following options are available:

- **Internal jumper** on certain sensors (jumper named TERM or TERMINATOR) – for example Temp-485 or HTemp-485
- **B-Cable adapter** with “LAST” configuration selected using the switches
- By **an external resistor** for sensors that do not have clamp connector or a DIP switch (Temp-485-Pt100). Terminate the RS-485 with an external resistor at the end of the bus (connect the resistor between clamps A and B on the last sensor). Value of this resistor is 120Ω. For short wirings, 470 Ω can be used to reduce the current consumption of the sensors.

**Note:** A disadvantage is that it is necessary to have a wiring topology **with a single beginning and a single, terminated end**, as opposed to the popular star topology with a single interconnection point.

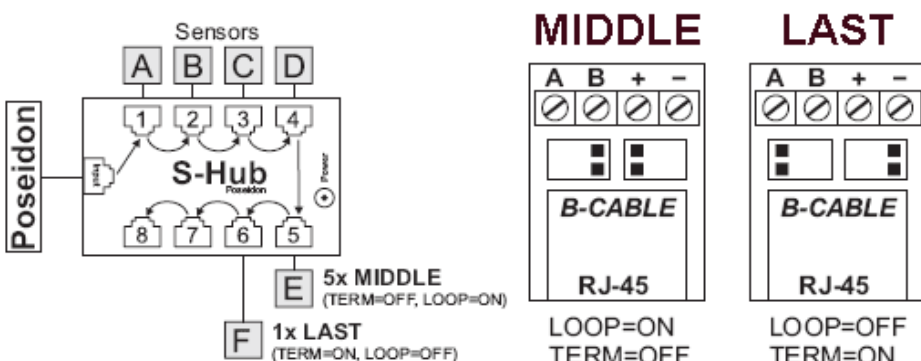
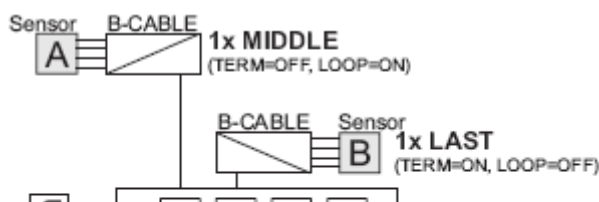
## Special accessories for the RS-485 bus

### **B-Cable** - RJ45 / 4-wire connection

The B-Cable module is an adapter that converts a RJ45 jack connection to a block of 4 terminals **A,B,+,−**.

Some of the available RS-485 sensors already have a RJ45 jack; however, some only have 4 terminals labeled **A,B,+,-** . Such sensors can be connected to the Poseidon 1250 unit or to an S-Hub using either a TP cable (4 or 6 wires) or the B-Cable module.

- The 4-wire connection length should not exceed 20 cm.
- Sensor position on the RS-485 bus (MIDDLE / LAST) is selected with jumpers; see the picture for details.

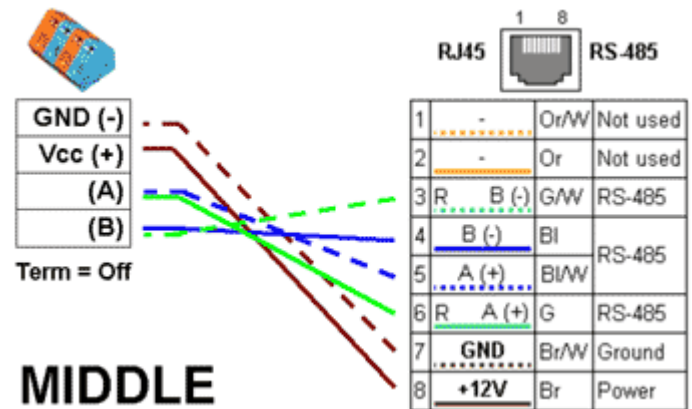




**Sensor RJ45 MIDDLE cable**

RS-485 cable, 0.5m, RJ45/4 pins. Connects 4 terminals (A, B, +, -) to a RJ45 modular jack (uses 3 pairs).

This cable is used to connect all sensors except for the last one in the chain. Sensors connected with this cable **must not terminate** the RS-485 bus.

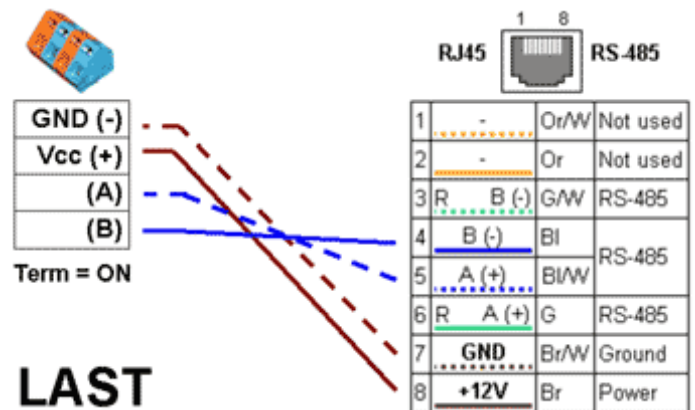


**Sensor RJ45 LAST cable** RS-485 cable, 0.5m, RJ45/4 pins. Connects 4 terminals (A, B, +, -) to a RJ45 modular jack (2 pairs only).

This cable is used to connect the last sensor in the chain.

The sensor connected with this cable **MUST TERMINATE** the RS-485 bus in one of the following ways:

- Equipped with an external 120Ω resistor
- Jumper or DIP switch at the sensor set to TERM=ON
- For other options, see the sensor manual



### **Poseidon Spider**

A converter to connect four 1Wire sensors to the Industrial bus (RS-485).

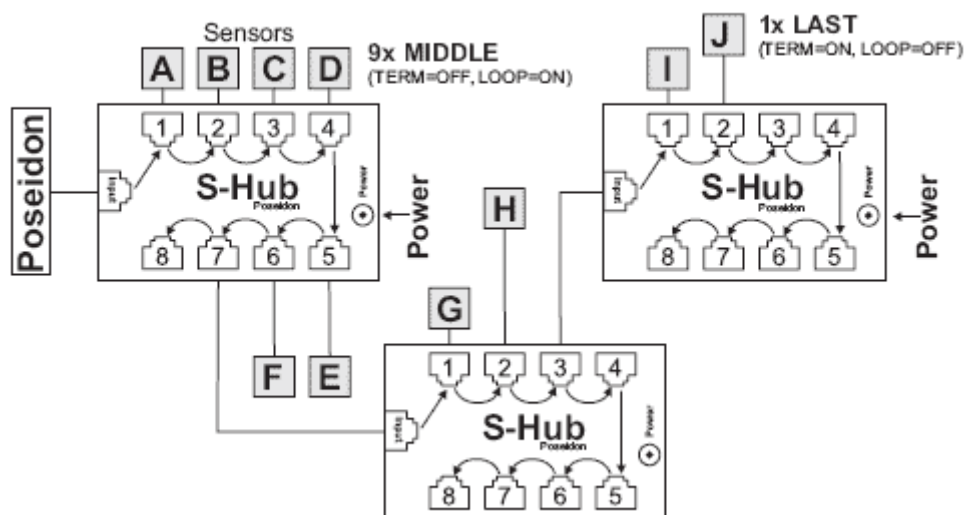
Each 1Wire bus sensor connects to a separate connector to enable a greater distance (up to 1000 meters, as defined by the Industrial bus specification).



### **S-Hub** – 8x RJ45 TP hub

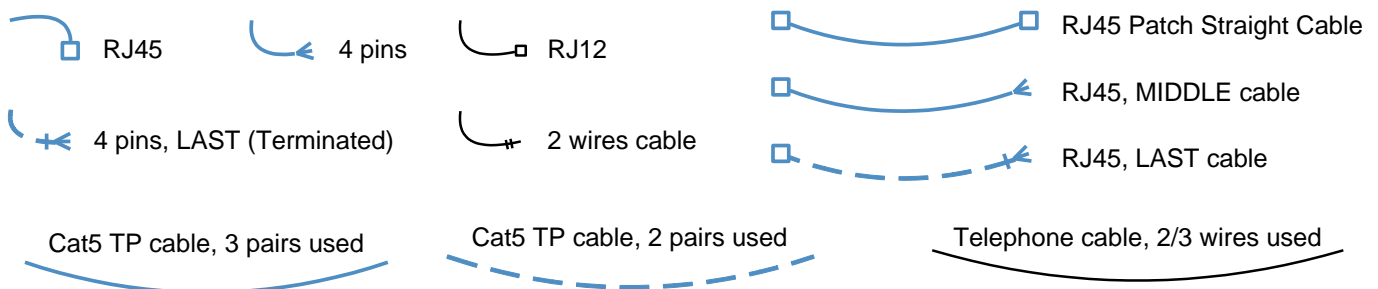
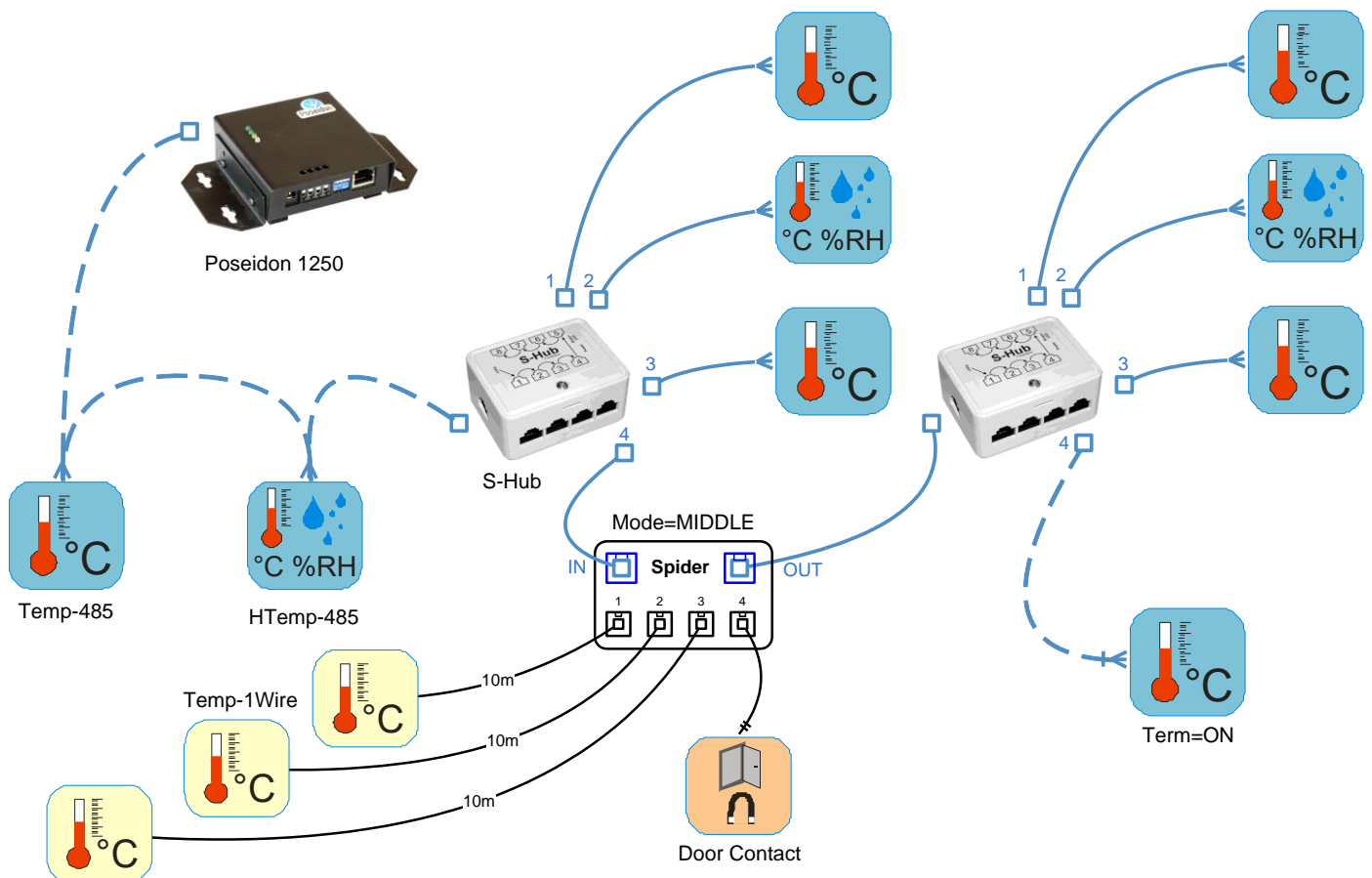
The S-Hub unit with one input and 8 output ports is used to connect up to eight RS-485 sensors with TP cables.

- Makes it possible to connect sensors in a star topology (sensors must be connected using TP cables)
- Simpler and faster connection of sensors
- Makes expanding an installation easier
- Easier way of powering the sensors. A standard power adapter connects directly to the S-Hub unit.



**Note:** *It is possible to mix the star / daisy-chain topologies with S-Hub, see the examples in the following chapter.*

## Connection example via RS-485



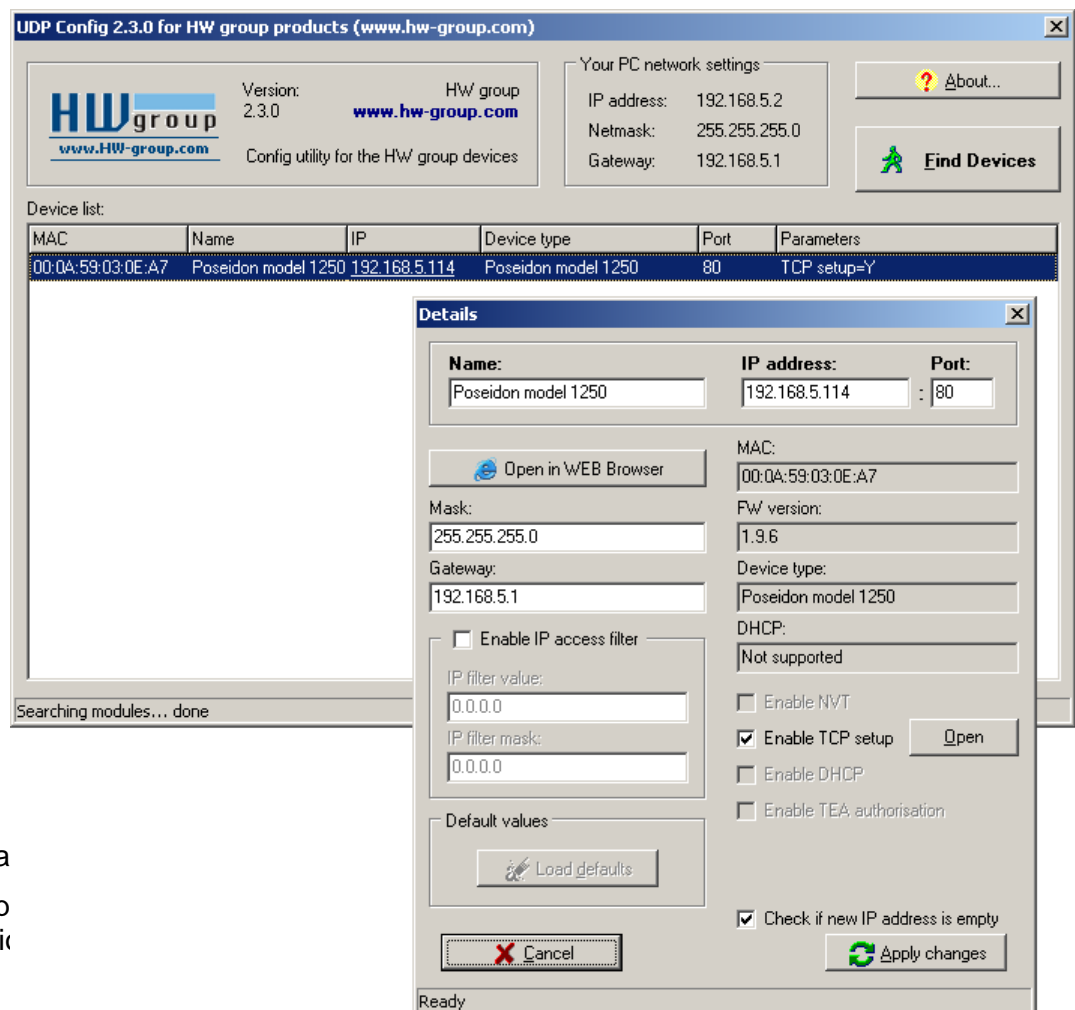
- The bus leads via a 4-wire connection from a Poseidon 1250 unit to two daisy-chained sensors, **Temp-485** and **HTemp-485**. Two twisted pairs are used for the connection.
- An **S-Hub** unit is daisy-chained via the RJ45 jack to the second **HTemp-485** sensor using a 4-wire connection. The brown pair carries power, the blue pair is used for data.
- Temp-485** and **HTemp-485** sensors are connected to S-Hub connectors 1 through 3 using 6-wire connections (brown pair for power, blue pair leads the bus to the device, green pair back from the device).
- Connector 4 of the first **S-Hub** unit is used to connect a **Spider** converter with a patch cable. The Spider is used to connect three **Temp-1Wire 10m** sensors and one contact (door contact connects to the blue RJ45 pair).
- The second **S-Hub** unit is connected with a patch cable to the **Spider** output.
- Temp-485** and **HTemp-485** sensors are connected to S-Hub connectors 1 through 3 using 6-wire connections (brown pair for power, blue pair leads the bus to the device, green pair back from the device).
- Connector 4 connects a **Temp-485** sensor over a 4-wire connection (brown pair to power the sensor, blue pair for the A/B signals of the bus).  
Termination is enabled at the Temp-485 sensor using the "TERM" jumper.

# User interface

## UDP Config

*UDP Config is a freeware utility for assigning IP addresses and changing network settings over the Ethernet.*

- Windows and Linux version
- IP address is assigned to a product with a specific MAC address
- No installation is necessary, simply run the EXE file
- Provides a clear overview of device names and parameters



## Main features

- Concise graphical interface
- Device name, type and communication parameters are displayed once a device is found
- Compatible with all HW group products (Poseidon, Damocles, PortBox, PortStore, I/O Controller, IP relay and other product lines)
- Windows and Linux versions available
- Displays current network settings of your computer
- Verifies whether the IP address is available before assigning it
- Single-click access to the product web page
- Ability to open a Telnet session for TCP Setup
- Ability to restore factory-default settings

Detailed program description as well as an instructional video clip are available on the CD supplied with the device, or at our website: [http://www.hw-group.com/software/udp\\_config/index\\_en.html](http://www.hw-group.com/software/udp_config/index_en.html)

## WEB interface

### Basic communication interface

Poseidon offers a simple and user-friendly graphical WWW interface. Besides displaying current readings, the interface provides access to complete device configuration and management, including network settings, sensor configuration and alarm responses (SNMP traps).

To access the web interface, enter the Poseidon IP address into the URL field of your browser:

The screenshot shows the Poseidon2 4002 web interface. The browser address bar shows <http://192.168.6.6/general.xml>. The page title is "Poseidon2 4002" and the tab is "Poseidon2 4002". The interface has a sidebar with a "General" menu and a main content area.

**General**

- General setup
- SNMP
- Email
- GSM
- Log & Time
- Portal
- Sensors
- Inputs
- Outputs
- System

Reload values every  [s]  Values reloaded 502

**Poseidon2 4002** **GENERAL**

**Dry Contact Inputs**

Name	ID	Current Value	Alarm Alert
Binary 1	1	0(Off)	Active if on
Binary 2	2	0(Off)	Active if on
Binary 3	3	0(Off)	Disabled
Binary 4	4	1(On)	Disabled
Binary 5	5	0(Off)	Disabled
Binary 6	6	0(Off)	Disabled
Binary 7	7	0(Off)	Disabled
Binary 8	8	0(Off)	Disabled
Binary 9	9	0(Off)	Disabled
Binary 10	10	0(Off)	Disabled
Binary 11	11	0(Off)	Disabled
Binary 12	12	0(Off)	Disabled
Comm Monitor 1	123	1(On)	Disabled

**Relay Outputs**

Name	ID	Current Value	Mode
BinOut 1	151	0(Off)	Manual
BinOut 2	152	0(Off)	Manual
BinOut 3	153	0(Off)	Manual
BinOut 4	154	0(Off)	Manual

**Sensors**

Name	ID	Current Value	Safe Range	Hysteresis	Alarm Alert
Sensor 240	47636	12.3 % RH	10.0.. 60.0	0.0	Email and SNMP trap
Sensor 241	53270	14.1 % RH	10.0.. 60.0	0.0	Email and SMS
Sensor 242	56342	10.7 % RH	10.0.. 60.0	0.0	EMAIL
Sensor 243	65285	0 %	0.0.. 100.0	0.0	SNMP trap
Sensor 244	41496	29.2 °C	10.0.. 60.0	0.0	Disabled
Sensor 245	47130	24.6 °C	10.0.. 60.0	0.0	Disabled
Sensor 246	50202	30.9 °C	10.0.. 60.0	0.0	Disabled

**Download**

SNMP Management Information Base: [MIB](#)

SNMP Object Identifier: [OID](#)

XML Schema Definiton: [XSD](#)

For more information try <http://www.hw-group.com/>

**Terminal Config (TCP Setup)**

Connect with telnet to: [192.168.6.6 Port 99](#)

<http://www.hw-group.com/>

The main page with the overview of sensor and input readings automatically reloads every 10 seconds. This period can be easily changed.

## Dry Contact Inputs

This section displays current states of dry contact inputs, including alarm status and settings. Active alarm is indicated by a **red background** of the corresponding line.

- **Name (Input name)**  
Textual name of the input, assigned by user in the Flash Setup
- **Number**  
Unique input ID, as marked on the unit
- **Current Value**
  - **0 (Off)** – Open contact
  - **1 (On)** – Closed contact
- **Alarm Alert**  
List of alarm alert settings for each input (triggered by value out of safe range)
- Line background color:
  - **Standard color** = Input is not in alarm
  - **Red** = Input is in alarm

## Sensors

The Sensors table displays information (valid at the time of the last refresh) about detected and activated sensors, including their states.

- **Name (Input name)**  
Textual name of the input, assigned by user in the Sensors tab.
- **ID**  
16-bit ID of the sensor, unique within a particular device
- **Current Value**  
Current sensor reading, including the unit  
*Note: If a sensor is not connected, -999.9 is displayed.*
- **Safe Range**  
A range of values in which the sensor is not in alarm state.
- **Hysteresis**  
hysteresis settings for preventing repeated alarms when the value moves around the Safe Range value. More in chapter [Sensor hysteresis](#).
- **Alarm Alert**  
List of alarm settings for each sensor (alarm is triggered by reading out of the safe range)

- Line background color:
  - **White / no color** = Input is not in alarm
  - **Red** = Input is in alarm
  - **Yellow** = Alarming is disabled for this input but the value is out of the safe range

## Miscellaneous information

- **Terminal Configuration (TCP Setup)** Link containing the IP address and the port to open a terminal session for TCP Setup
  - **MIB** links to the SNMP definition file  
(right-click the link and select “*Save Target as...*” to save the file to disk)
  - **OID** - SNMP Object Identifier - Contains a list of most frequent SNMP OID  
(right-click the link and save the file to your hard drive with "Save Target as.." option)
  - **XSD** links to the XML definition file for **values.xml**(right-click the link and select “*Save Target as...*” to save the file to disk)
- **Text and link** “For more information try [www.HW-group.com](http://www.HW-group.com)”  
Customizable link to the supplier or service provider. The text can be changed in TCP Setup, see the detailed description of **TCP Setup**.

**Note:** The design of the main page can be changed only after consulting the manufacturer; we offer a “Customization” program. For more information, please contact your dealer.



## General Setup

Network parameters, trusted IP address range, temperature units, output states, etc.

The screenshot shows a web browser window with the address bar displaying `192.168.2.245/network.xml`. The page title is "Poseidon2 4002" and the sub-header is "GENERAL SETUP". On the left is a navigation menu with the Poseidon logo and links for General, General setup (selected), SNMP, Email, GSM, Log & Time, Portal, Sensors, Inputs, Outputs, and System. An "Apply Changes" button is at the bottom left of the menu.

The main content area is divided into several sections:

- Device**: A form with "Name:" set to "Poseidon2 4002".
- Network Settings**: A form with fields for IP Address (192.168.2.245), Submask (255.255.252.0), Gateway (192.168.1.254), Primary DNS (192.168.1.253), Secondary DNS (192.168.1.250), HTTP Port (80), TCP Telnet Setup (99), and DHCP Client (checked).
- IP Access Filter**: A table showing access permissions.
- Other settings and information**: Fields for "Display temperature in:" and "System temperature in:" both set to "Celsius [°]", and "HW Security Protection:" set to "Disabled".
- User Passwords**: A table for setting passwords for different user roles.

At the bottom of the page, a link is provided: "For more information try <http://www.hw-group.com/>".

Access to	IP Address Value	IP Mask Range
HTTP	0.0.0.0	0.0.0.0
SNMP	0.0.0.0	0.0.0.0

	User Name	Password
Read Only:		
Read Only + Outputs:		
Read and Write:		

### Device Name

Name assigned to a particular device. The name is shown in all lists along with the IP address (UDP Config); it is used as the sysname variable in SNMP.

## Security

Security settings. Properties of individual modes are shown in the following table. Lines indicate the method of accessing the device over IP, columns specify the restrictions resulting from the respective security settings.

	No restrictions (default)	HW protection DIP = On	User Password			IP Access Filter		SNMP Communities	
			Read only	Read + Outputs	Read & Write	HTTP	SNMP	Comun 1	Comun 2
Web index (General)	✓	✓	✓	✓	✓	filtered			
Other pages	R/W	R	R	R/W**	R/W	filtered			
Values.xml	R	R	R	R	R	filtered			
Setup.xml	R/W	R	R	R/W**	R/W	filtered			
SNMP get (next)	R	R					filtered	R*	R*
SNMP set	W	✗					filtered	[R*/]W*	[R*/]W*
Modbus/TCP	R/W	R							
TCP setup	✓	✗	✗	✗	✓				
UDP Config	R/W	R							
FW update	✓	✗	✗	✗	✓	filtered			
M2M outputs	R/W	R/W	R	R/W	R/W				

\* R and/or W must be enabled on the SNMP Setup tab by checking appropriate boxes.

W\*\* Only outputs can be changed, nothing else. Even the output mode cannot be changed.

**Note:** The “No restrictions” column reflects the default configuration (also shown on the screenshots presented here). That is, HW protection DIP=Off, no password set, IP Access filter set to 0.0.0.0/0.0.0.0.

- **User Passwords** Two separate user accounts (user name and password) can be set up for SNMP and HTTP access.
  - Account types:
    - **'Read Only'** can only read values and configuration settings
    - **'Read Only + Outputs'** can read values and set outputs, cannot change configuration settings (not even sensor names)
    - **'Read & Write'** can perform any changes
- The "Read Only" account only has read access to values, cannot perform any configuration changes. The "Read&Write" account can change configuration settings.
  - After setting a login name and password, you will be asked to enter the login details every time you attempt to open the WWW interface.
  - Passwords also apply to access to the values.xml and setup.xml files – see the table.
  - In case of "Read Only" HTTP access, you will no longer be able to change configuration settings in WEB setup.
- **IP Access Filter**  
Allows you to define a range of trusted IP addresses that are allowed to access the Poseidon over HTTP and SNMP. Each protocol has its own range.

Always only the IP addresses range is set, using the default IP address and the range around the entered value (mask), following the pattern where AND is bit multiplication. Access is granted if the above condition is true.

#### IP trying to access AND IP Mask Range) = IP Address Value

IP Filter settings		Access granted to	
Address value	Mask Value	From – To	
192.168.1.2	192.168.1.2	192.168.1.2	Only one IP allowed
192.168.1.87	192.168.1.87	192.168.1.87	Only one IP allowed
192.168.1.0	192.168.1.224	192.168.1.0 – 192.168.1.31	32 allowed addresses
192.168.1.0	192.168.1.0	192.168.1.0 – 192.168.1.255	All 256 addresses 192.168.1.x allowed
192.168.0.2	192.168.254.255	192.168.0.2 and 192.168.1.2	One address but on two networks
192.168.0.0	192.168.252.240	192.168.0.0 - 192.168.0.15 192.168.1.0 - 192.168.1.15 192.168.2.0 - 192.168.2.15 192.168.3.0 - 192.168.3.15	4 x 16 addresses allowed

- **SNMP Access - communities (passwords)**

Two different password can be configured. Each can be set for R or R/W access and can be eventually disabled.

Most SNMP applications work with the following settings (default settings). For security reasons, we highly recommend to change the R/W access password.

- R (get, get next) “public”
- R/W (set) “private”

**Note:** SNMP Access settings are available at the *SNMP Setup* tab

## What to do if you forget your password

- Restore the factory-default configuration of the device by one of the following methods:
  - Use the **UDP Config** utility (must run on the same network segment).  
Right-click the line corresponding to the device and select “Load defaults” from the pop-up menu.
  - Use the **DIP Load defaults** feature.  
Toggle the DIP1 switch several times during the first 5 seconds after powering up the device.
  - Connect to the **Serial Setup** (RS-232) and execute the **Load Defaults** function from the terminal menu.  
Access to the menu is: 9600/8N1, DIP1=1, Reset the device.

## Network Settings

This block configures the main network parameters for Ethernet communication:

- **IP address**  
IP address of the unit. After a change, the device needs to be restarted
- **Submask**  
Local network mask. After a change, the device needs to be restarted
- **Gateway**  
Default gateway. After a change, the device needs to be restarted
- **Primary DNS/Secondary DNS**  
see below
- **HTTP port**  
Port for communication over the HTTP protocol. Default is **80**
- **TCP Telnet Setup**  
Port for the terminal telnet setup mode. Default is **99**
- **DHCP Client**  
Activates assigning of network parameters by DHCP server Activated in default

Network Settings	
IP Address:	192.168.6.6
Submask:	255.255.255.0
Gateway:	192.168.6.1
Primary DNS:	192.168.6.1
Secondary DNS:	192.168.1.253
HTTP Port:	80
TCP Telnet Setup:	99
DHCP Client:	<input type="checkbox"/>

## DNS Settings

Primary and secondary DNS server settings. Gateway needs to be set correctly for correct operation.

A DNS server is necessary for converting domain names to IP addresses. Without a correctly configured DNS server, the following functions will not work:

- Time sync (SNTP), used in e-mails and SNMP traps to timestamp events
- E-mailing (SMTP)
- Logging of values with timestamps

## Other Settings and Information

- **Display temperature in**  
Specifies the unit of temperature (C – Celsius / centigrade, F – Fahrenheit, K – Kelvin). The setting only applies to the WWW interface. All other interfaces and protocols use °C, unless specified otherwise in the interface description.
- **System temperature in**  
settings of the temperature unit in communication protocols and in the log. You can select Celsius (for back compatibility set in default) or „by Display temp“ when the units set in *Display temperature in* will be used
- **HW Security Protection**  
A DIP switch that prevents any changes in the device configuration.
  - OUTPUTS: You can change values of outputs.
  - CONFIGURATION: No changes are permitted.

The protection status is displayed in the bottom left-hand corner. When the HW Protection is active, any configuration changes, including changes of the output states, are ignored. This mode is useful when connecting the Poseidon to a publicly accessible network.

**Note:** Any changes must be confirmed by clicking the *Apply Changes* button. A successful change is indicated by an animation in the status bar next to the *Apply changes* button.

## SNMP

The SNMP Setup tab allows you to configure the settings for communication with the device using the SNMP protocol.

**Poseidon2 4002** SNMP

**General SNMP Settings**

SNMP Port:

**SNMP Access**

Community	Read	Write	Enable
public	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
private	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

**SNMP Trap Destinations**

Destination	Community	IP Address	Port	Enable
A.	public	192.168.1.242	163	<input checked="" type="checkbox"/>
B.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
C.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
D.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
E.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>

**MIB II System Group**

SysContact:

SysName:

SysLocation:

<http://www.hw-group.com/>

### General SNMP Settings

- **SNMP port**  
Port for communication within SNMP protocol **[161]**.

## SNMP Access

Defines names and access rights for user groups that can work with the Poseidon unit.

- **Community**

Textual name of the authorized group (usually **Public** and **Private**)

- **Read** – The community is authorized to read variables over SNMP
- **Write** – The community is authorized to write values to variables over SNMP
- **Enable** – Enables or disables the group (community)

## SNMP Trap Destination

Defines target destinations for sending SNMP traps.

- **Community** – Textual name of the group for the SNMP trap being sent
- **IP address** – Destination address where the SNMP traps are sent
- **Port** – Destination port where the SNMP traps are sent
- **Enable** – SNMP traps are sent to this destination

## MIB II System Group

User-defined settings in the standard SNMP header.

- **SysContact** – Contact information of the system administrator, e.g. an e-mail address
- **SysName** – Device name
- **SysLocation** – Location of the unit, e.g. "IT room, floor 2"

**Note:** *Any changes must be confirmed by clicking the Apply Changes button. A successful change is indicated by an animation in the status bar next to the Apply changes button.*



## Email & SMS Setup

**Poseidon2 4002** EMAIL

**Email Settings**

SMTP Server: mail.hw.cz [IP Address or DNS Name]  
 SMTP port: 25  
 Email Sender Address: olmr@hw.cz  
 Authentication: ☒  
 Secure TLS mode: ☐  
 Name/Password: smtp / \*\*\*\*\*  
 Email Subject Text: Pokus

**Email Destinations**

Alarm Email Recipient: olmr@hw.cz  
 Alarm Email Copy:   
 Alarm Email Copy:   
 Alarm Email Copy:   
 Alarm Email Copy:   
 Periodic Log Recipient: olmr@hw.cz

**Test Email**

State: 250 2.0.0 Ok: queued as 5084922021E

[Send Test Email](#)

**Periodic Status Settings**

Periodical Status: ☐ Period: 5 [minutes]  
 Alarm reminder: ☐ Period: 3 [minutes]

[Apply Changes](#)

<http://www.hw-group.com/>

- **SMTP Server** – Host name or IP address of the SMTP server
- **SMTP Port** – Port for communication with the SMTP server (**25** by default)
- **Email Sender Address** – E-mail address, used as a sender of the e-mail messages
- **Authentication** – Enables user name/password authentication if the SMTP server requires it
  - **Secure TLS mode** – Activates SSL/TLS authorization (gmail, etc.)
  - **Name** – User name for authentication with the SMTP server
  - **Password** – Password for authentication with the SMTP server
- **Email Subject Text** – Subject of the e-mails sent
- **Alarm Email Recipient** – E-mail address of the recipient (To)
- **Alarm Email Copy** – E-mail address of the recipient (Cc)
- **Periodic Log Recipient** – E-mail address of the recipient for periodically e-mailed logs
- **Send Test Email** button – sends a test e-mail

[Send Test Email](#)

**Tip:** *It is not always necessary to configure a SMTP Server in order to send e-mails. The Poseidon can work as SMTP server itself and deliver the e-mails directly to the user's mailbox. However, always test this mode in your particular environment – the e-mails sent in this mode are often blocked by various spam filters due to missing reverse MX records.*

*Poseidon can only send e-mails, it cannot receive them!*

### Received e-mail example:

E-mail is sent upon every alarm activation and deactivation.

```

DATE          TIME          Device_NAME    Device_IP
10.10.2005    15:04:27    Server_room1  192.168.1.20

Email initiated: 48245 T-Room          Alarm ACTIVATED

-----
ID    SENSOR_Name    VALUE    UNIT    Safe_RANGE    ALARM
-----

ALARM state:
-----
48245 T-Room          25.30    °C    -45.0 ..    22.0 Enabled
      1 C-water          OFF                      if OFF

Sensors list:
-----
48245 T-Room          25.30    °C    -45.0 ..    22.0 Enabled
1559 H-Room          53.00    %RH    30.0 ..    80.0 Enabled
  48 T-Srv01         -27.30    °C    -49.0 ..   -25.1 Disabled
257 ABCDEFGHIJKLMNO -109.30    °C   -150.0 .. -105.0 Enabled
   1 C-water          OFF                      if OFF
   2 C-AirFl          OFF                      if ON
   3 C-Door1          OFF                      Disabled

-----
Server_room1:  http://192.168.1.20          00:0A:59:00:00:00
-----

```

**Tip:** *For detailed description of the e-mail format, see the “Using Poseidon units in your programs” section.*

### Sending a test e-mail

Multiple systems need to be configured correctly in order to send e-mails from the device successfully. Therefore, it is advisable to double-check the following parameters:

- **Gateway** for the network connection
- **DNS server** in network settings
- **SMTP server** and port
- **Authentication** turned on, correct **name** and **password**
- **Spam filter** of your mailbox turned off

## GSM SMS Interface

The screenshot shows the Poseidon2 4002 web interface. The browser address bar shows <http://192.168.6.6/serial.xml>. The page title is "Poseidon2 4002" and the tab is labeled "Poseidon2 4002". The interface has a sidebar with a "Poseidon" logo and a menu with options: General, General setup, SNMP, Email, GSM (selected), Log & Time, Portal, Sensors, Inputs, Outputs, and System. The main content area is titled "GSM" and contains three sections: "Serial Port Settings", "SOAP Destination", and "GSM SMS Interface".

**Serial Port Settings**

Port Function: GSM Modem

**SOAP Destination**

	SOAP Server IP Address or DNS Name	Link /Path	Port	Enable
A.	192.168.1.36	service.xml	80	<input checked="" type="checkbox"/>

**GSM SMS Interface**

GSM Function: Remote

SMS + Ring When Alarm: ☐

RS-232 GSM Module: Not enabled

SMS Center Number:

Remote Destination: Remote Server A

**GSM SMS Recipients**

Alarm SMS Recipient 1:	<input type="text"/>
Alarm SMS Recipient 2:	<input type="text"/>
Alarm SMS Recipient 3:	<input type="text"/>
Alarm SMS Recipient 4:	<input type="text"/>
Alarm SMS Recipient 5:	<input type="text"/>

Send Test SMS

Apply Changes

<http://www.hw-group.com/>

### Serial Port Settings section

**Port Function** sets the serial port function (available only for models with serial port and server part netGSM. 3 available options:

- *Disabled* – Serial port is off – Only if the modem is not connected and the device works as a client.
- *GSM modem* – A GSM modem is connected to a device and Poseidon works as a server for netGSM

### Remote SMS GW

Allows setting up the IP address, HTTP port and service destination (where the request for sending the SMS messages and for RFID functions is sent. **On Poseidon units the path is always named *service.xml* !**

## GSM SMS interface

Used for setting up the SMS sending parameters.

- **GSM Function** – Sets if the SMS messages will be sent through a local modem (available only when serial port is in GSM modem state)
- **SMS+Ring when Alarm** – enables calling the target number during SMS sending
- **RS-232 GSM module** – Shows GSM modem status
  - *Not Enabled* – inactive. Shows after changing the RS-232 port settings, until the change is saved
  - *Not Found*. Poseidon2 is set for connecting with local GSM modem, however the modem was not found
  - *Waiting for modem* – Searching for modem in process
  - *Initializing* – Modem initialization in process
  - *Ready*
- **SMS center Number** – Control information, loaded from the SIM card, about provider's SMS center number. If the number is not loaded, no SMS can be sent.

## GSM SMS recipient section

Allows users to choose the recipient numbers for SMS messages - regardless the function mode (local/remote modem)

## SMS example

- Device name: **Poseid11**
- Sensors in Alarm:
  - Rack11 = 48.5°C, threshold is 40°C
  - T-Room = 48.3°C, threshold is 35°C
  - H-Room = 10% RH, threshold is 45% RH

`Poseidon ALARM: Rack11(48,5), T-Room(48,3), H-Room(10)`

**Tip:** *For a detailed description of the SMS format, see the “Using Poseidon units in your programs” section.*

**Note:** *Any changes must be confirmed by clicking the Apply Changes button. A successful change is indicated by an animation in the status bar next to the Apply changes button.*

## Log & Time

This tab lets you configure the date, time, and logging options (if supported by the particular Poseidon model).

The screenshot shows the Poseidon2 4002 web interface. The browser address bar displays <http://192.168.6.6/logtime.xml> and the page title is 'Poseidon2 4002'. The interface has a purple theme. On the left is a sidebar with the Poseidon logo and a menu with the following items: General, General setup, SNMP, Email, GSM, **Log & Time** (selected), Portal, Sensors, Inputs, Outputs, and System. At the bottom of the sidebar is an 'Apply Changes' button. The main content area is titled 'Poseidon2 4002' and 'LOG AND TIME'. It contains three sections:   
1. **Date and Time**: Shows 'Current Date: 22.01.2014' and 'Current Time: 21:07:09'.   
2. **Time Synchronization**: Shows 'SNTP Server: time.nist.gov' and 'Time zone: +1hour'. There is a 'Synchronize Time' button.   
3. **Device Logger Settings**: Shows 'Log period: 60 [s]', 'Logfile capacity: 16days, 10hours and 10minutes', 'Report Log Period: 24 [h]', and 'Erase log after e-mail: ☒'. There are 'Open log File' and 'Clear log File' buttons.   
At the bottom of the page is the URL <http://www.hw-group.com/>.

### Actual Date / Time

Current date and time settings

- **Current Date** – Date in the [dd.mm.yyyy] format, for example: **31.12.2014**
- **Current Time**  
Current time in the 24-hour [hh:mm:ss] format, for example: **17:38:55** The time updates automatically while the browser window is open. It is only saved when the “**Set Date & Time**” button is clicked.

**Note:** *Date and time changes are not linked to the Apply Changes button and must be confirmed by clicking the Set Date & Time button.*

## Time Synchronization

SNTP server settings for time synchronization. If the time is not set (the date 1.1.1970 is displayed), the device attempts to synchronize the time approximately once per hour until successful.

- **SNTP Server**  
IP address or host name of the SNTP server to synchronize the time with. Preset server is **ntp1.sth.netnod.se**
- **Your time shift compared to time server**  
Configure the offset of your timezone from the time of the SNTP server.  
SNTP servers use UTC time, which is nearly equivalent to GMT (London time). Hence, for Paris, Berlin, Prague, and other locations within the same time zone, set +1 hour.

**Note:** *The clock does not run when the device is powered off. The unit contains no battery. After a power failure, the time will be synchronized with the SNTP server.*

## Data Logger Settings

Configuration parameters for logging values to a circular buffer within the internal flash memory. When the buffer is full, the oldest values are overwritten with the newest ones. This function is supported only by certain Poseidon models.

Device Logger Settings	
Log period:	<input type="text" value="60"/> [s]
Logfile capacity:	16days, 10hours and 10minutes
Report Log Period:	<input type="text" value="24"/> [h]
Erase log after e-mail:	<input checked="" type="checkbox"/>

- **Log Period**  
Period for logging of all values into a logfile
- **Logfile capacity XXX**  
The capacity estimate is given in days, hours and minutes. The Poseidon calculates the capacity based on the number of sensors detected.  
**Caution:** *When the circular buffer is full, the remaining capacity shown will be zero. Clear the buffer to find out the total capacity.*
- **Report Log Period**  
Period of sending log via e-mail
- **Erase log after e-mail**  
Erases the logfile after it is sent via e-mail. Decreases the size of the e-mail attachment and can speed up the data transfer
- **Open logfile** button  
Stores the current log file to disk by calling the external **/spilog.txt** file.
- **Clear logfile** button  
Clears all values from the logfile by calling the external **/spilog.del** file.

**Note:** *Any changes must be confirmed by clicking the Apply Changes button. A successful change is indicated by an animation in the status bar next to the Apply changes button.*

## Portal



# Poseidon

- General
- General setup
- SNMP
- Email
- GSM
- Log & Time
- Portal**
- Sensors
- Inputs
- Outputs
- System

## Poseidon2 4002

### Portal

Portal Message

[SensDesk.com: Check sensor online.](#)

Portal

Portal Enable: ☒  
 Push Period:  [s] 0=Disable  
 Server Address:   
 IP Port:  Default 80  
 User Name:   
 Password:   
 Current Push Timer: 8  
 Current Log Timer: 8  
 Current Autopush Block Timer: 0  
 Manual Push:

Sensors autopush config

Name	ID	Current Value	Autopush
Sensor 240	47636	12.3 %RH	<input type="text" value="0.0"/>
Sensor 241	53270	14.1 %RH	<input type="text" value="0.0"/>
Sensor 242	56342	10.7 %RH	<input type="text" value="0.0"/>
Sensor 243	65285	0 %	<input type="text" value="0.0"/>
Sensor 244	41496	30.0 °C	<input type="text" value="0.0"/>
Sensor 245	47130	25.9 °C	<input type="text" value="0.0"/>
Sensor 246	50202	31.9 °C	<input type="text" value="0.0"/>

Dry Contact Inputs autopush config

Name	ID	Current Value	Autopush
Binary 1	1	0(Off)	<input type="checkbox"/>
Binary 2	2	0(Off)	<input type="checkbox"/>
Binary 3	3	0(Off)	<input type="checkbox"/>
Binary 4	4	1(On)	<input type="checkbox"/>
Binary 5	5	0(Off)	<input type="checkbox"/>
Binary 6	6	0(Off)	<input type="checkbox"/>
Binary 7	7	0(Off)	<input type="checkbox"/>
Binary 8	8	0(Off)	<input type="checkbox"/>
Binary 9	9	0(Off)	<input type="checkbox"/>
Binary 10	10	0(Off)	<input type="checkbox"/>
Binary 11	11	0(Off)	<input type="checkbox"/>
Binary 12	12	0(Off)	<input type="checkbox"/>
Comm Monitor 1	123	1(On)	<input type="checkbox"/>

Configures the communication with the portal using the HWg-Push protocol. Poseidon2 is the active side and establishes the connection periodically and/or whenever a change in a sensor value exceeds the configured AutoPush value.

The [www.SensDesk.com](http://www.SensDesk.com) portal connection parameters are filled in.

### Portal Message section

Information from the portal, containing for example links to graphs, etc. This relies on the portal type.

### Portal section

- **Portal** – Enables or disables portal function
- **Push Period** – Period for sending the data to a remote server. The period is set on the side of the portal.

- **Server address** – full URL address of a remote server
- **IP Port** – listener port of the portal
- **Username** – Username for assigning the device to a user. Will be received from the portal administrator.
- **Password** – Password for assigning the device to a user. Will be received from the portal administrator.
- **Current Push Timer** – Shows the remaining time to the next Push sending.
- **Current Push Timer** – Shows the remaining time to the data saving to the flash memory.
- **Current AutoPush Block Timer** – Shows the time remaining to the next AutoPush. This period is set from the side of the portal.
- **Manual Push** - Button for immediate manual sending of the data to the portal.

### AutoPush configuration

Poseidon2 connects to the portal and notifies a value change whenever a change in the sensor reading exceeds the configured AutoPush value.

This configuration only applies to the communication between Poseidon2 and the online portal. Local alarm values are configured in the portal.

#### For portal connection, check:

- 4) Correct **Gateway IP** address
- 5) **DNS server** in network settings
- 6) Correct **Server Address** of the portal



## Sensors

This tab configures the parameters for all sensors on both buses.

**Poseidon2 4002** SENSORS

**Sensors**

Name	Safe Range	Hysteresis	Delay [s]	SNMP Trap	Email	SMS
Sensor ID: 47636 Code: <input type="text" value="Sensor 240"/> Value: <b>13.2 %RH</b>	<input type="text" value="10.0"/> .. <input type="text" value="60.0"/>	<input type="text" value="0.0"/>	<input type="text" value="0"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sensor ID: 53270 Code: <input type="text" value="Sensor 241"/> Value: <b>15.1 %RH</b>	<input type="text" value="10.0"/> .. <input type="text" value="60.0"/>	<input type="text" value="0.0"/>	<input type="text" value="0"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sensor ID: 56342 Code: <input type="text" value="Sensor 242"/> Value: <b>11.3 %RH</b>	<input type="text" value="10.0"/> .. <input type="text" value="60.0"/>	<input type="text" value="0.0"/>	<input type="text" value="0"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sensor ID: 65285 Code: <input type="text" value="Sensor 243"/> Value: <b>0 %</b>	<input type="text" value="0.0"/> .. <input type="text" value="100.0"/>	<input type="text" value="0.0"/>	<input type="text" value="0"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sensor ID: 41496 Code: <input type="text" value="Sensor 244"/> Value: <b>27.5 °C</b>	<input type="text" value="10.0"/> .. <input type="text" value="60.0"/>	<input type="text" value="0.0"/>	<input type="text" value="0"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sensor ID: 47130 Code: <input type="text" value="Sensor 245"/> Value: <b>23.6 °C</b>	<input type="text" value="10.0"/> .. <input type="text" value="60.0"/>	<input type="text" value="0.0"/>	<input type="text" value="0"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sensor ID: 50202 Code: <input type="text" value="Sensor 246"/> Value: <b>29.5 °C</b>	<input type="text" value="10.0"/> .. <input type="text" value="60.0"/>	<input type="text" value="0.0"/>	<input type="text" value="0"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<http://www.hw-group.com/>

### Find 1Wire + RS485 sensors and Find 1Wire sensors

Starts the automatic detection of connected sensors.

Click the button to stop all activity and start the autodetection. The process can take a long time, even 2 minutes.

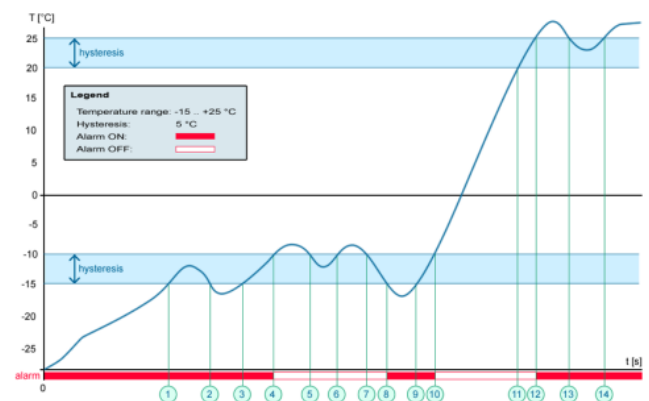
When the detection completes, a dialog informs you about the results. After a successful autodetection, all sensors are ready to measure.

**Note:** *For a faster autodetection with a more detailed output, see the TCP Setup section.*

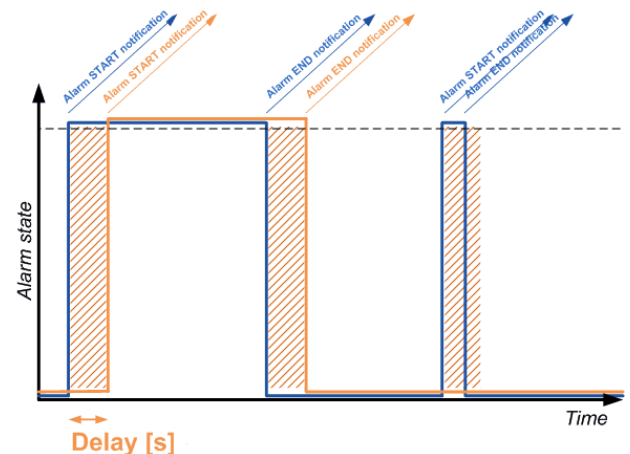
The sensors must be with Autodetection after every change.

- **Name** – Name of the input, up to 12 chars (e.g. “above door”, “area1 humid”).
- **Sensor ID** – Unique sensor identifier, specifies its address on the bus.  
More about sensors addressing can be found in materials about Poseidon family.  
Range for sensors is **[65..150]** and **[256..65535]**
- **Code** – Full ID of the 1-Wire sensor
- **Value** - actual sensor state.  
Sensors that are not found or not working read as **-999.9**.
- **Safe Range**  
Range of values which are considered to be OK.  
With Safe Range set to **15,0 – 35,0** an alarm e-mail will be sent when the values are **below 14,9** and **above 35,1**.

- **Hysteresis**  
Defines a **tolerance band** when exceeding a threshold in order to avoid raising multiple alarms when the reading fluctuates near the threshold.  
See the detailed description in the Sensor Hysteresis section.



- **Delay [s]**  
Delays the information about alarm beginning and alarm end.



- **Out of Safe Range**  
Defines the response if a reading is outside of its safe range
  - **SNMP Trap** – Enables sending a SNMP trap upon alarm activation/deactivation
  - **Email** – Enables sending an e-mail upon alarm activation/deactivation
  - **SMS** – Enables sending an SMS upon alarm activation/deactivation

**Note:** SMS (text messages) are sent through a GSM modem connected directly to the Poseidon unit via the RS-232 interface.

## Inputs

Parameters for Dry Contact inputs.

**Poseidon2 4002** INPUTS

**Dry Contact Inputs**

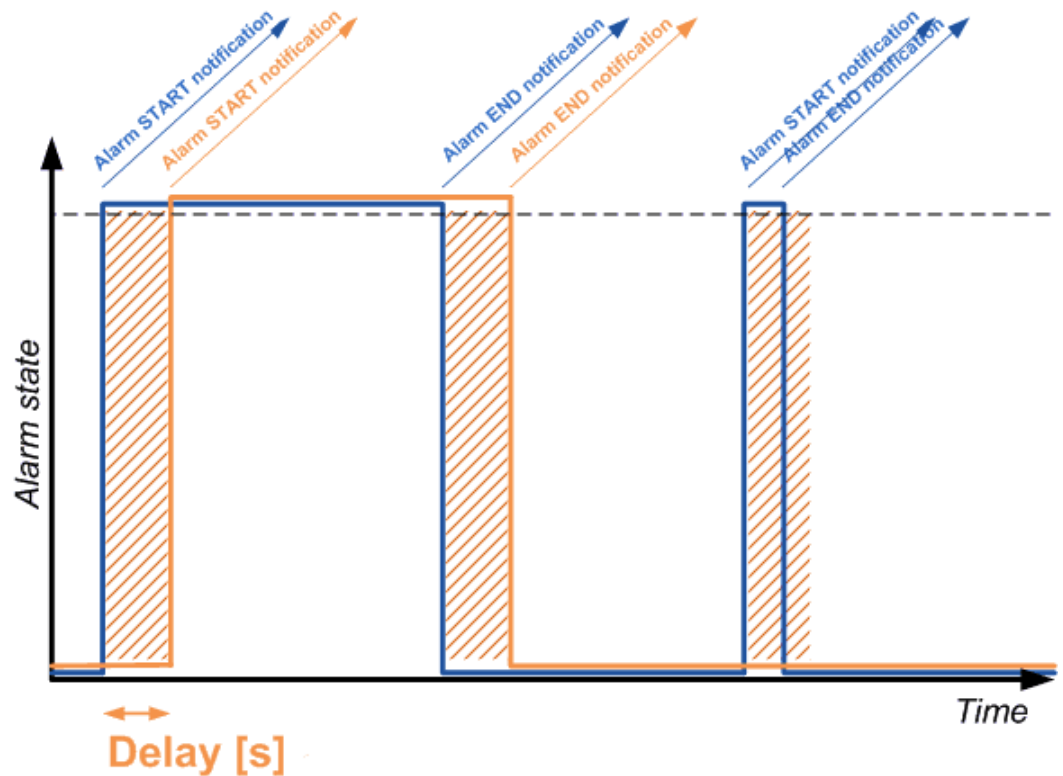
Name	ID	Current Value	Alarm State	Delay [s]	Out of Safe Range SNMP Trap	Out of Safe Range Email & SMS
Binary 1	1	0(Off)	Active if on ▼	5	<input type="checkbox"/>	<input type="checkbox"/>
Binary 2	2	0(Off)	Active if on ▼	5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Binary 3	3	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>
Binary 4	4	1(On)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>
Binary 5	5	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>
Binary 6	6	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>
Binary 7	7	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>
Binary 8	8	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>
Binary 9	9	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>
Binary 10	10	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>
Binary 11	11	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>
Binary 12	12	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>
Comm Monitor 1	123	1(On)	Disabled ▼	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>

[Apply Changes](#)

<http://www.hw-group.com/>

- **Name** – Name of the input, up to 12 chars (e.g. “left door”, “smoke room 1”).
- **ID** – Unique ID of the input variable within the device [1..32]
- **Current Value** – Current state of the input (“0 (Off)” / “1 (On)“)
- **Alarm State** – Alarm state definition for each input
  - **Active if On** – Alarm is active whenever the input is in 1 (On)
  - **Active if Off** – Alarm is active whenever the input is in 0 (Off)
  - **Disabled** – Input has no alarm state defined

- **Delay [s]**  
Delays the information about alarm beginning and alarm end.



- **Out of Safe Range**  
Reaction to activation/deactivation of the alarm state for dry contact inputs
  - **SNMP Trap** – Enables sending a SNMP trap upon alarm activation/deactivation
  - **Email** – Enables sending an e-mail upon alarm activation/deactivation
  - **SMS** – Enables sending an SMS upon alarm activation/deactivation

**Note:** *SMS (text messages) are sent through a GSM modem connected directly to the Poseidon unit via the RS-232 interface. See the list of Poseidon models for details.*

## Outputs

Control and mode configuration of outputs.

ID	Current Value	Basic parameters		Output Control
151	0(Off)	Name: BinOut 1#1	ON (Closed) Name: On	Manual (selected) / LocalCondition Change to On
152	0(Off)	Name: BinOut 2	ON (Closed) Name: On	Manual (selected) / LocalCondition Change to On
153	0(Off)	Name: BinOut 3	ON (Closed) Name: On	LocalCondition (selected) Trigger Value: 0.0 Dependent on: Plastic indoor( 10693) Change to On
154	0(Off)	Name: BinOut 4	ON (Closed) Name: On	Manual (selected) / LocalCondition Change to On

- **ID** – Unique ID of the output within the device [151..215]
- **Name** – Name of the output, up to 12 chars (e.g. “top fan”, “Door rack 4”).
- **Current Value** – Current state of the input (“0 (Off)” / “1 (On)“)
- **ON (Closed) Name** – State 1 name (On) - for example set, flooded, closed, etc.
- **ON (Closed) Name** – State 0 name (Off) - for example disconnected, open, etc.
- **Pulse timer** – Allows switching the output to the state 1 (On) for a defined time. If you need the opposite polarity, use the NO/NC relay output. With Pulse Timer = 0, the pulse function on the output is inactive (default value)

Switching the output for a defined time apply also for local condition mode. Pulse time starts when the condition is triggered (Safe Range is exceeded) Switches only once after the condition is met.

- **Output Control**

- **Manual** – Output controlled over the web or M2M protocols (XML, SNMP..)
  - **Change to On / Off** – Change output state (after confirming with Apply Changes)
- **Local Condition** – Output is controlled by the sensor state condition.  
For M2M protocols the output value is for reading only (output cannot be controlled).

Output is controlled by the Target Value, hysteresis (IDLE Range) set for the specific sensor is used.

- **On if any alarm**  
The output is closed if at least one of the inputs or sensors is in alarm.  
This condition accepts also DELAY and HYSTERESIS settings of the specific active sensors and inputs.
  - **On if alarm on**  
This output switches if an Alarm occurs on a specific selected sensor (input).
  - **On if value equal to Trigger**  
The output is closed if the value matches the Target Value setting.
  - **On if value higher than Trigger**  
The output is closed if the Current Value is greater than the Target Value setting.
  - **On if value Lower than Trigger**  
The output is closed if the Current Value is lower than the Target Value setting
- **Trigger Value** – Border value of the condition  
(This output switches On for example if the value is higher than the **Trigger Value**)
  - **Dependent On** – Selection of a sensor to which the condition applies.

**Note:** *Output conditions are not supported on Poseidon 2250.  
Local conditions are also called **IP Thermostat mode**.*

## GSM modem (local or remote)

**Poseidon2 4002**

**Serial Port Settings**

Port Function:

**SOAP Destination**

SOAP Server	IP Address or DNS Name	Link /Path	Port	Enable
A.	192.168.1.36	service.xml	80	<input checked="" type="checkbox"/>

**GSM SMS Interface**

GSM Function:

SMS + Ring When Alarm: ☐

RS-232 GSM Module:

SMS Center Number:

Remote Destination:

**GSM SMS Recipients**

Alarm SMS Recipient 1:

Alarm SMS Recipient 2:

Alarm SMS Recipient 3:

Alarm SMS Recipient 4:

Alarm SMS Recipient 5:

### Text messages (SMS) can be sent in two ways:

#### A) Local GSM modem

A GSM modem is connected to the Poseidon's RS-232 interface. The modem is powered from its own adapter or from the 12V power out. An active SIM is inserted in the modem, PIN is disabled. SMS Center should be retrieved from the SIM after start-up.

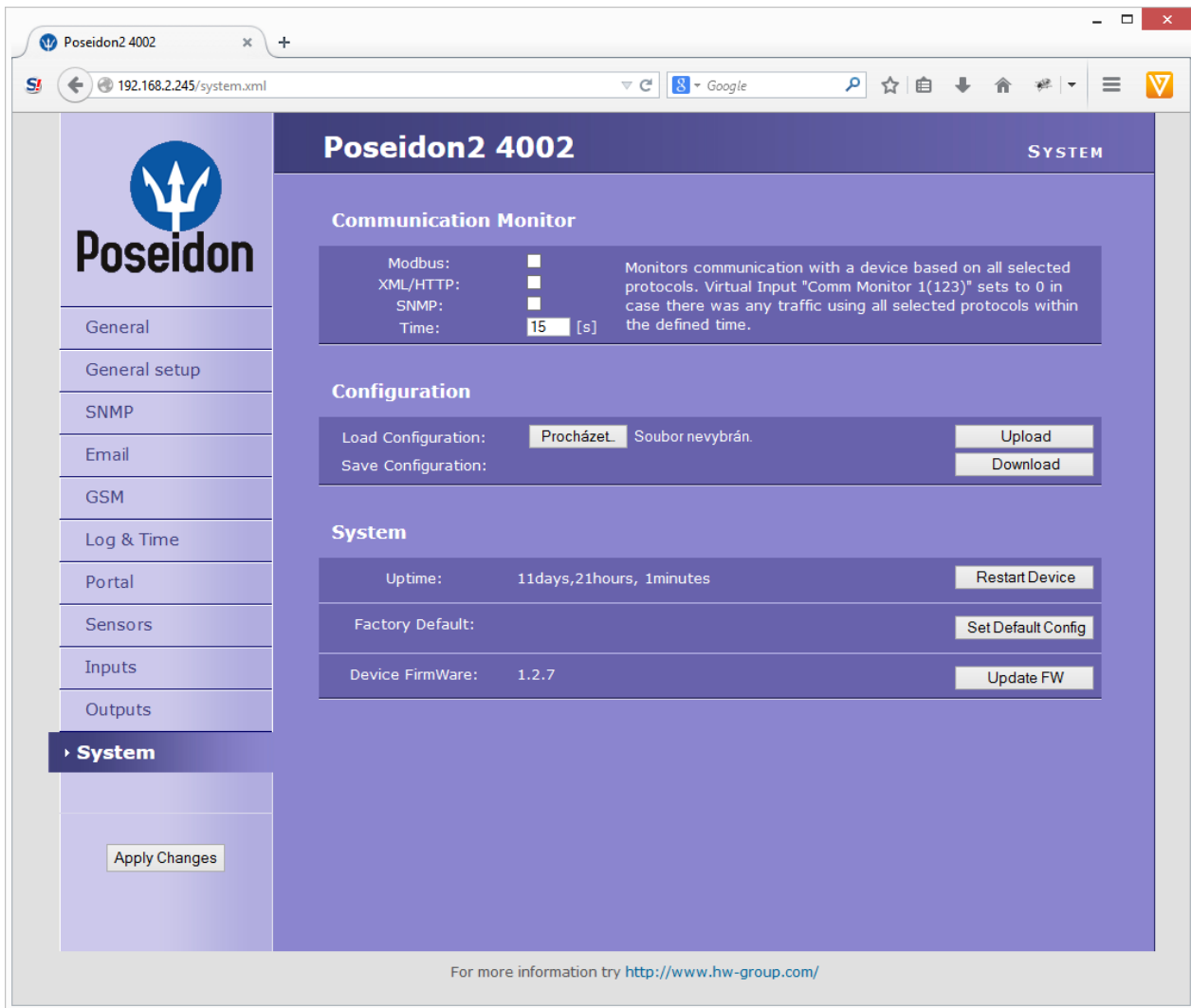
#### B) Remote GSM modem

Poseidon does not have its own GSM modem. "Serial Port Settings" is set to "Disabled". To send a SMS, a GSM modem connected to another Poseidon unit or the "SMS GW" product is used. Remote GSM modem has to be accessible online, via „[service.xml](#)“, using address A, usually on port 80

SOAP protocol is used for communication. If the connection is not established or is refused, Poseidon tries to send the SMS again.

- The throughput of the remote GSM modem is limited to 5 SMS per minute for Poseidon units and about 20 SMS per minute for "SMS GW".
- The modem function can be tested by pressing the corresponding button.
- The **SMS + Ring When Alarm** option rings the telephone number for 4 seconds after sending the alarm SMS.

## System



### Communication monitor

Monitors communication with the Poseidon over selected protocol. If the communication stops for longer than the set time, virtual input **Comm monitor** is triggered.

- **Save Configuration** – Stores the setup.xml file with device configuration to your HDD.
- **Load Configuration** – Loads a XML file with the configuration from your PC.
- **Uptime** – Time of uninterrupted device operation (since last restart)
- **Check for firmware updates**  
Online check if a newer firmware version is available at the HW group server.
- **Set Default Config** – Restore factory-default settings.
- **Restart device** – resets the unit
- **Update FW** - Loads a .HWg firmware file from your PC to the device.



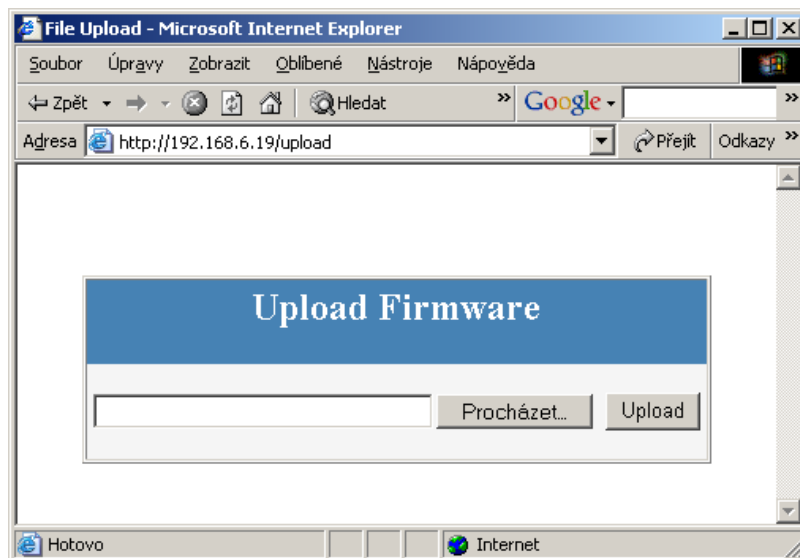
## Update Firmware

### Updating the firmware over the WEB

Upload the firmware in a **.hwg** file over HTTP to <http://x.x.x.x/upload/>.

Connection cannot be interrupted during the transmission. If the FW is not loaded correctly this way, use the previously mentioned RS-232 update option to upload the file.

Firmware in the **.HWg** format is available at the Poseidon website, or on the supplied CD.



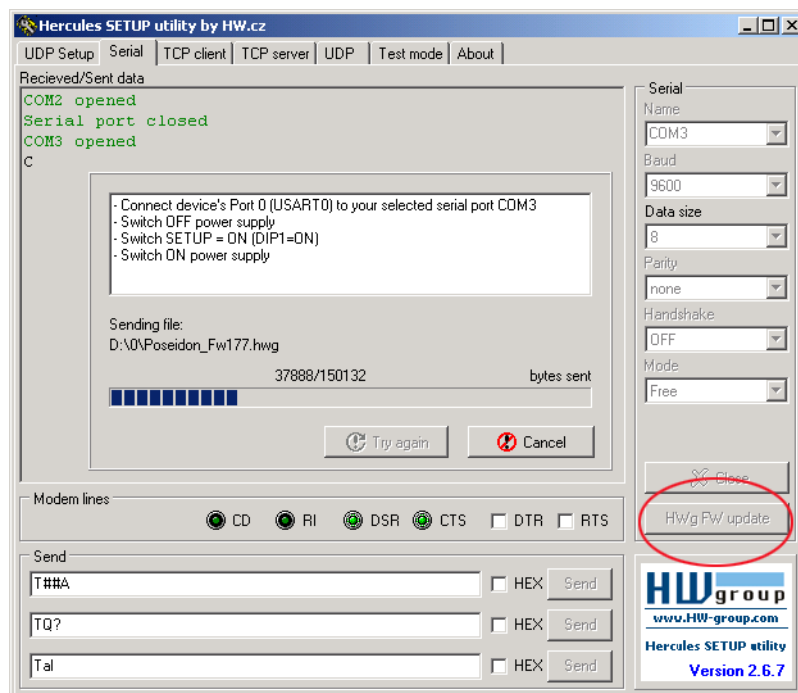
### Firmware Update over RS-232

Poseidon2 4002 firmware can be updated via RS-232 interface. The firmware consists of a single file with a **.HWg** extension. You can download the file at our website.

**Caution:** Please contact us in case of any problems with firmware upload.

### Poseidon Firmware Upload – step by step

- Power off the Poseidon.
- Connect the Poseidon2 to the serial port on your PC using a RS-232 cable with the “Laplink” wiring.
- Set the Poseidon2 DIP switches to: DIP1=ON, DIP2=OFF, DIP3=OFF, DIP4=OFF.
- Run the Hercules Setup utility and select the “Serial” tab.
- Select the serial port where the Poseidon2 is connected.
- Click the “HWg FW update” option and select the firmware file you want to upload to the Poseidon2.
- When the screen with the progress bar appears, power the Poseidon2 back on.
- After uploading the firmware, previous configuration settings are retained. The Poseidon2 restarts and is immediately operational.
- Remember to return the DIP switches to their previous positions.



## Software Applications

### HWg-PDMS

Windows application that logs data from all HW group devices into its internal database.

The application runs in the background (NTservice). Data are retrieved from the device over HTTP or e-mail.

Data can be exported over XML or automatically stored to MS Excel.



**License:** Free HWg-PDMS version for 3 sensors  
Paid versions for 8 / 20 / 200 / unlimited sensors

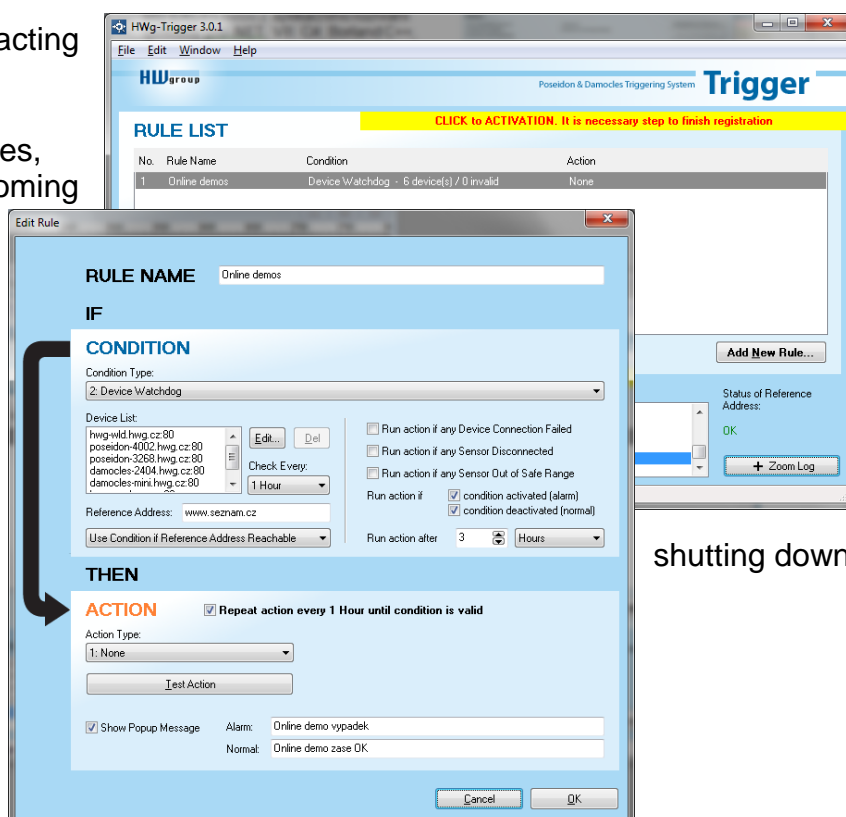
### HWg-Trigger

Windows application for detecting and reacting to events.

Detects, for instance, disconnected devices, failed sensors values out of range, or incoming SNMP Trap alerts.

Possible responses include sending an e-mail, activating a relay over the network, or sending a text message (SMS) using HWg-SMS-GW.

Other responses include displaying a warning message in Windows, starting an application, or the computer.

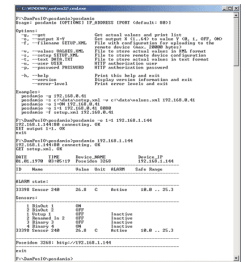


shutting down

**License:** 30-day trial version free of charge

## PosDamIO

Poseidon Damocles I/O is a command-line utility for Windows and Linux that lets you control Poseidon and Damocles units over the XML interface. Calling the program can print out the sensors, inputs and outputs states, but also set an output to a log. 1 or 0.

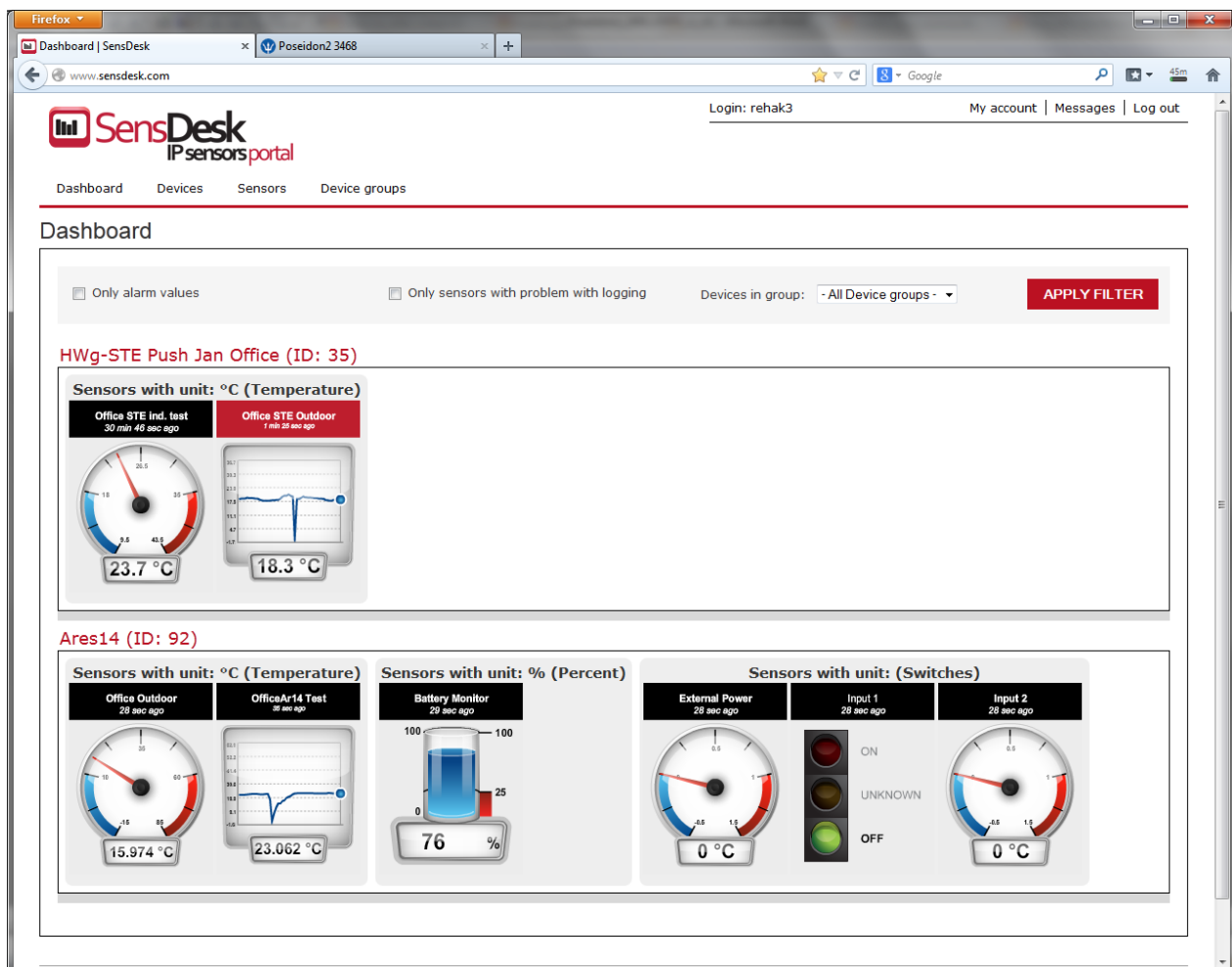


## SensDesk.com

Online portal for collecting data from LAN and GSM sensors.

Poseidon2 can connect to the SensDesk Internet service. All devices can be managed from a single WWW interface. Watch sensor states, display your devices in a map, compare trends in time and analyze alarm messages.

SensDesk is a way to implement fully functional monitoring of customer technology in a matter of minutes, with fixed costs of the system. No need for installing a complex system or adding another server at the customer side.

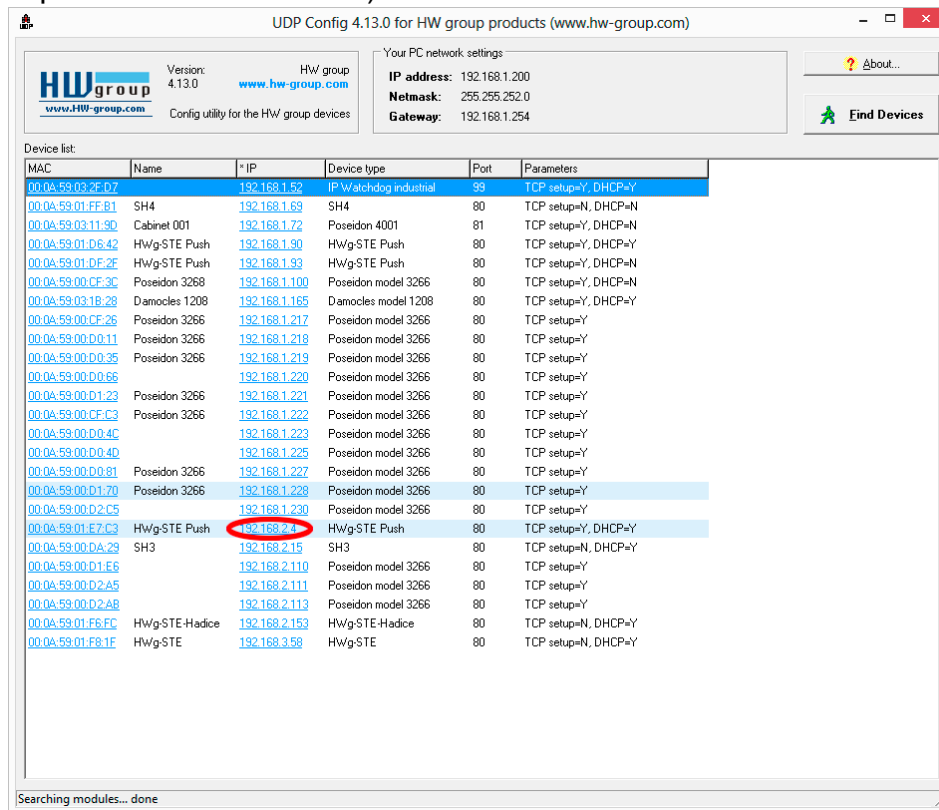


- Overview of all sensors at a single place
- Centralized alarm configuration for individual sensors
- Mobile application for monitoring
- Remote configuration of GSM devices

# Connecting Poseidon2 to SensDesk portal


## Connecting to the portal

- 1) Connect the device to a computer network and set the network parameters (More in First steps chapter in the user manual).



- 2) Go to the device's WWW setup, Portal tab, in the Portal Config section **tick the Portal field**, save the changes and then press the Manual Push button. Standard procedure:  
<http://sensdesk.com/portal.php>

>> **Click the message** in “Portal message” section.



## Poseidon

General

General setup

SNMP

Email

GSM

Log & Time

**• Portal**

Sensors

Inputs

Outputs

System

Apply Changes

### Poseidon2 4002

**PORTAL**

---

**Portal Message**

SensDesk.com : Check sensor online.

---

**Portal**

Portal Enable:	<input checked="" type="checkbox"/>
Push Period:	30 [x] 0=Disable
Server Address:	www.sensdesk.com/portal.php
IP Port:	80 Default 80
User Name:	
Password:	
Current Push Timer:	5
Current Log Timer:	8
Current Autopush Block Timer:	0
Manual Push:	<span style="border: 1px solid red; border-radius: 50%; padding: 2px;">Manual Push</span>

---

**Sensors autopush config**

Name	ID	Current Value	%RH	Autopush
Sensor 240	47636	12.3	%RH	0.0
Sensor 241	53270	14.1	%RH	0.0
Sensor 242	56342	10.7	%RH	0.0
Sensor 243	65285	0	%	0.0
Sensor 244	41496	30.0	°C	0.0
Sensor 245	47130	25.9	°C	0.0
Sensor 246	50202	31.9	°C	0.0

---

**Dry Contact Inputs autopush config**

Name	ID	Current Value	Autopush
Binary 1	1	0(Off)	<input type="checkbox"/>
Binary 2	2	0(Off)	<input type="checkbox"/>
Binary 3	3	0(Off)	<input type="checkbox"/>
Binary 4	4	1(On)	<input type="checkbox"/>
Binary 5	5	0(Off)	<input type="checkbox"/>
Binary 6	6	0(Off)	<input type="checkbox"/>
Binary 7	7	0(Off)	<input type="checkbox"/>
Binary 8	8	0(Off)	<input type="checkbox"/>
Binary 9	9	0(Off)	<input type="checkbox"/>
Binary 10	10	0(Off)	<input type="checkbox"/>
Binary 11	11	0(Off)	<input type="checkbox"/>
Binary 12	12	0(Off)	<input type="checkbox"/>
Comm Monitor 1	123	1(On)	<input type="checkbox"/>



## Poseidon

General

General setup

SNMP

Email

GSM

Log & Time

**• Portal**

Sensors

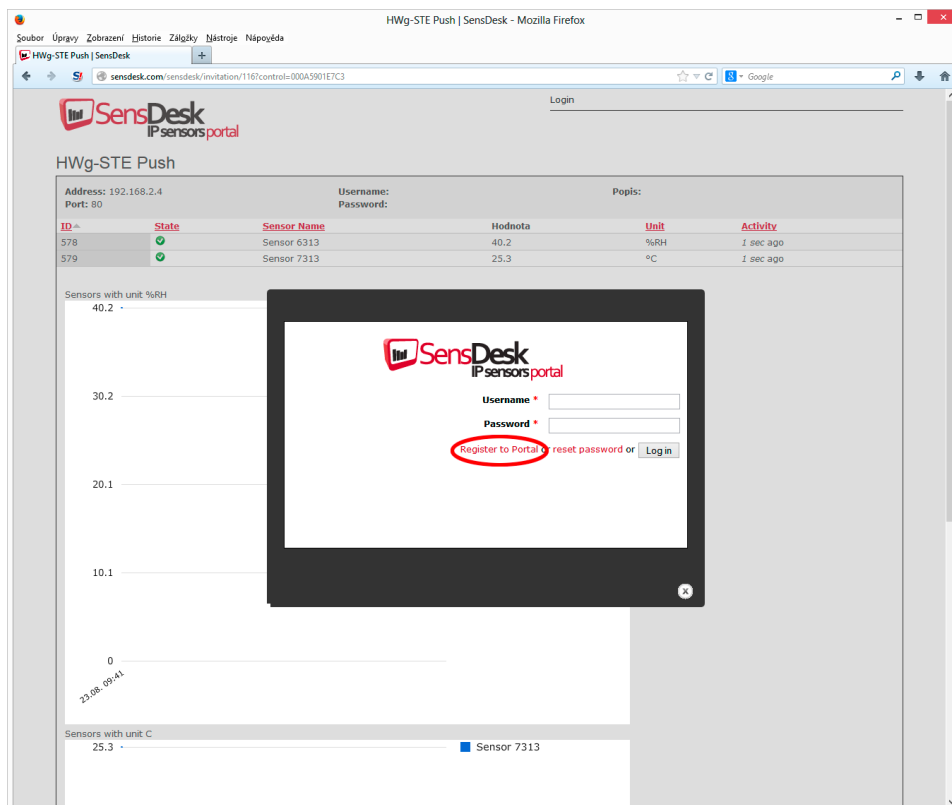
Inputs

Outputs

System

Apply Changes

- 3) By clicking the **SensDesk.com: register your IP sensor** link you will be redirected to the SensDesk.com service website - to a login dialog.



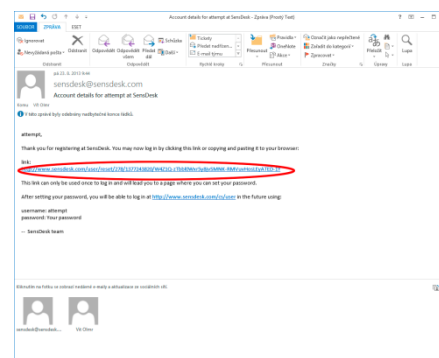
- 4) If you already have a user account, enter the login details and the device will be automatically assigned to your account.

Otherwise click the *Register to Portal* link to get to the registration form.

- 5) Create the login details. E-mail address has to be unique for the whole portal.

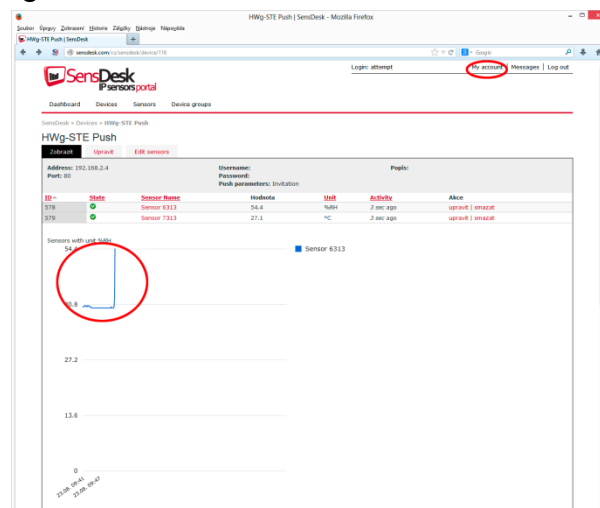
**Company name** field allows you to create a 3rd level domain (typically *company.sensdesk.com*). If you leave this field empty, a user name will be used for the sub domain.

A user account will be created after clicking the *Create new account* button and at the same time an activation e-mail will be sent to your e-mail address. A links sent to your e-mail address has to be used in order to activate the account.



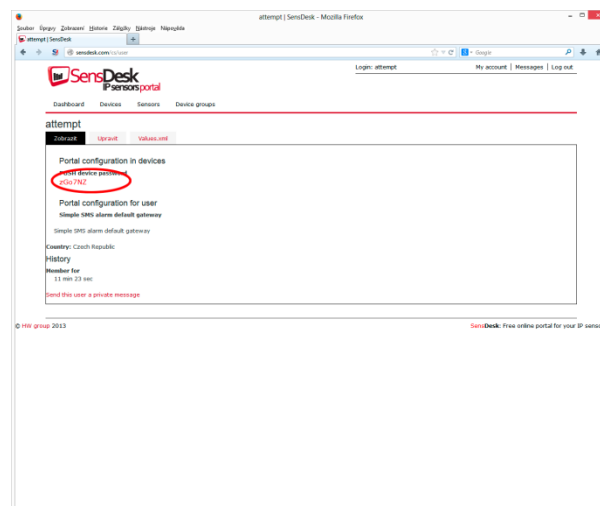
## 6) Account activation will redirect you to an *Invitation* page.

Test the portal reaction to your devices. After leaving the page the reaction time to changes in measured values will increase to 15 minutes. In case a shorter time is needed, set the "AutoPush" parameters in the device's setup.



## 7) **Device Password** can be found in the user account options on SensDesk.com (**My Account**), in the field **Push**.

This password is saved in devices and mobile applications. Device password cannot be changed and for security reasons it is different to your user password.



## 8) Mobile phone app: **SensDesk Mobile**

In the account configuration settings on SensDesk.com are instructions how to download the mobile application for free.





# Using Poseidon2 units in your applications

## PosDamIO – Command line control

**Poseidon Damocles I/O is a command-line utility for Windows and Linux that lets you control Poseidon and Damocles units over the XML interface. Calling the program can print out the sensors, inputs and outputs states, but also set an output to a log. 1 or 0.**

The PosDamIO utility is intended for applications and scripts that need a simple way of controlling or reading remote sensors, digital inputs and digital outputs. You can modify the utility to suit your needs – it is included in the HWg SDK.

### Basic functions

- Dump the states of sensors, digital inputs and outputs to the screen, or to a file
- Set the state of an output with a command-line command
- Read the state of an input and set the ErrorLevel return value accordingly
- Download or upload the values.xml file containing the current readings
- Download or upload the setup.xml file containing device configuration for easy device cloning

### Features

- Windows and Linux version
- Source code included in the HWg SDK
- All communication with the device takes place over the XML interface
  - Before uploading, the utility transforms the XML file to the format required by the device (see product manual)

```

C:\WINDOWS\system32\cmd.exe
F:\DanPosIO\posdamio>posdamio
Usage: posdamio [OPTIONS] IP_ADDRESS [PORT <default: 80>]

Options:
  -g, --get                Get actual values and print list
  -o, --output X=Y         Set output X (<1..64>) to value Y (<0, 1, OFF, ON>)
  -f, --filename SETUP.XML File with configuration for uploading to the
                           remote device <max. 20000 bytes>
  -v, --values VALUES.XML File to store actual values in XML format
  -s, --setup SETUP.XML   File to store remote device configuration
  -t, --text DATA.TXT    File to store actual values in text format
  -u, --user USER         HTTP authorization user
  -p, --password PASSWORD HTTP authorization password
  -h, --help              Print this help and exit
  --version               Display version information and exit
  --error-level            Print error levels and exit

Examples:
posdamio -g 192.168.0.41
posdamio -s c:\data\setup.xml -v c:\data\values.xml 192.168.0.41
posdamio -o 1=ON 192.168.0.41
posdamio -o 1=1 192.168.0.41 8080
posdamio -f setup.xml 192.168.0.41

F:\DanPosIO\posdamio>posdamio -o 1=1 192.168.1.144
192.168.1.144:80 connecting. OK
SET output 1=1. OK
exit

F:\DanPosIO\posdamio>posdamio 192.168.1.144
192.168.1.144:80 connecting. OK
GET setup.xml. OK

DATE      TIME      Device_NAME      Device_IP
01.01.1970 03:05:19 Poseidon 3268    192.168.1.144

ID  Name      Value Unit  ALARM  Safe Range
-----
33398 Sensor 240 26.8  C     Active 10.0 .. 25.3

ALARM state:

Sensors:
1 BinOut 1      ON
2 BinOut 2      OFF
1 Ustup 1       OFF      Inactive
2 Renamed In 2  OFF      Inactive
3 Binary 3      OFF      Inactive
4 Binary 4      ON       Inactive
33398 Sensor 240 26.8  C     Active 10.0 .. 25.3

Poseidon 3268: http://192.168.1.144
exit
F:\DanPosIO\posdamio>
  
```

### Conclusion:

PosDamIO is a free command-line utility that enables simple control of Poseidon units from within batch files. Its source code is freely available in the HWg SDK package.

For detailed information, see: **AN29: PosDamIO controls outputs through the command line.**



## HWg-SDK

---

*HWg SDK is a library of functions, as well as examples of their use, for Unix and Windows. The functions are intended to help third-party SW solutions communicate with our products over IP. SDK reduces the time needed to implement support for our products into your SW.*

- **HWg SDK is free of charge**; however, you need to register before downloading. After completing the registration you will receive a link to the latest version download.  
[http://www.hw-group.com/software/sdk/index\\_en.html](http://www.hw-group.com/software/sdk/index_en.html)
- HWg SDK is available in **English only**.
- SDK installs to the Windows environment, its interface is HTML-based.

When is the SDK useful for you? For example, Poseidon products share the readings in a well-documented XML file. A simple XML parser is sufficient to transform the data into another structure. However, to receive alarm alerts, a SNMP trap parser needs to be implemented, and so on.

All of these functions use standard interfaces. On the other hand, unless you already have a complete SNMP implementation in your software, it is easier to use HWg SDK functions that invoke the respective event handlers in your software.

### Basic SDK features

- HWg SDK is simple to understand
- HWg SDK speeds up the implementation of HW group products in your SW
- With HWg SDK, you don't have to worry about future changes of structures, interface updates, and so on
- HWg SDK is ready to work with most programming languages

### Structure according to the programming language

- **Visual Basic (6.0)** (all 3xx examples)
- **Borland C++** (all 1xx examples)
- **Delphi** (all 4xx examples)
- **Microsoft Visual C++** (all 2xx examples)
- **.NET** (all 5xx examples)
- **other** examples that do not directly use SDK functions (all 9xx examples)

## Examples of HWg-SDK contents

- Ready-made examples of functioning, complete programs that can be reused
- Documented functions, examples of use

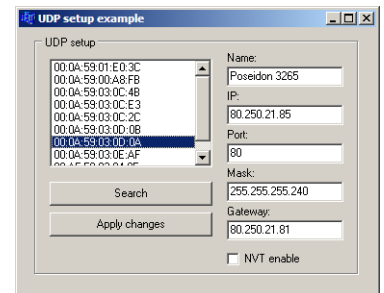
**Caution:** *The entire SDK is commented in English only. Therefore, the description that follows is in English only.*

## Ready-made examples in HWg SDK (for Borland C++ builder)

### • EX101: UDP setup

Simple application to handle UDP setup functions in Borland C++ Builder using the HWg SDK. Includes searching for devices as well as reading and writing their basic network parameters.

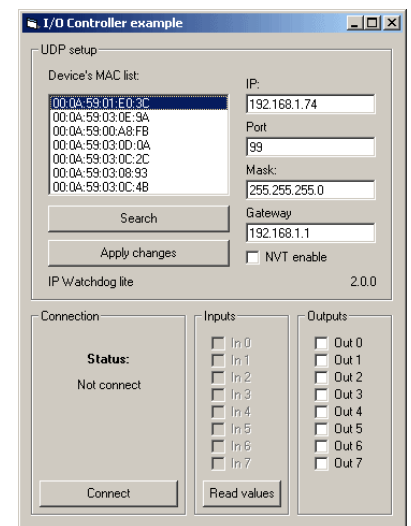
**Functions used:** `hwudps_init`, `hwudps_uninit`, `hwudps_reinit`, `hwudps_search`, `hwudps_search_finish`, `hwudps_count`, `hwudps_record`, `hwudps_setup`, `hwudps_setup_finish`



### • EX102: I/O Controller example

Simple example to demonstrate UDP search for devices, reading and writing basic network parameters and controlling I/O pins of the I/O Controller device. Written in Borland C++ Builder using the HWg SDK. I/O pins are controlled with NVT commands based on a RFC2217 extension by HW group.

**Functions used:** `hwudps_init`, `hwudps_uninit`, `hwudps_reinit`, `hwudps_search`, `hwudps_search_finish`, `hwudps_count`, `hwudps_record`, `hwudps_setup`, `hwudps_setup_finish`, `hwnvt_init`, `hwnvt_uninit`, `hwnvt_open`, `hwnvt_close`, `hwnvt_open_finish`, `hwnvt_clr_callback_struct`, `hwnvt_in_change2callback`, `hwnvt_get_in`, `hwnvt_wait_finish`, `hwnvt_get_in_cache`, `hwnvt_get_out`, `hwnvt_get_out_cache`, `hwnvt_set_out_pin`



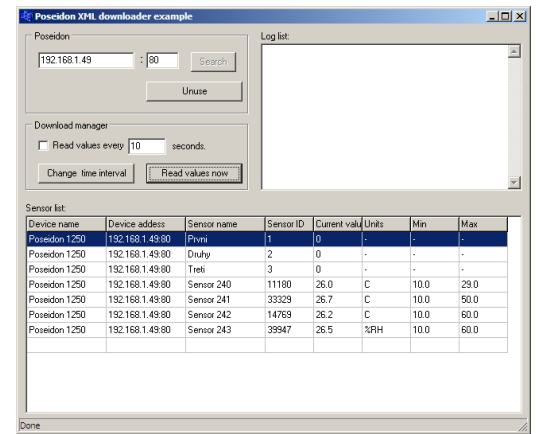
### Demonstrated features

- UDP broadcast search for devices
- Displaying discovered devices
- Editing the parameters for a specified MAC address
- Applying changes to a specified device
- Reading the state of 8 input bits
- Writing the state to the output register (bit by bit)
- Using a callback function to quickly detect changes at input pins
- **EX103: Remote serial port control**  
An example to demonstrate UDP search for devices, reading and writing basic network parameters and controlling the parameters of a remote serial port. Communication with the remote device, reading and writing data over a TCP connection. Written in Borland C++ Builder using the HWg SDK. Serial port settings are controlled with NVT commands based on a RFC2217 extension by HW group.

### • EX104: XML file downloader XML A

An example to demonstrate UDP search for devices, reading their basic network parameters, and downloading and parsing the XML file with sensor and binary input states. Values can be downloaded from **one device only at a time**. Written in Borland C++ Builder using the HWg SDK.

**Functions used:** hwudps\_init, hwudps\_uninit, hwudps\_reinit, hwudps\_search, hwudps\_search\_finish, hwudps\_count, hwudps\_record, hwxml\_init, hwxml\_uninit, hwxml\_open, hwxml\_close, hwxml\_get\_values, hwxml\_get\_values\_cache, hwxml\_finish



### Demonstrated features

- UDP broadcast search for devices
- Displaying discovered devices and selecting five of them
- Downloading the XML file with readings via the HTTP protocol and parsing it
- Storing all values from a device into a table
- Downloading the readings manually or automatically every XX seconds
- All errors are logged to the log window

### • EX105: XML file downloader XML B

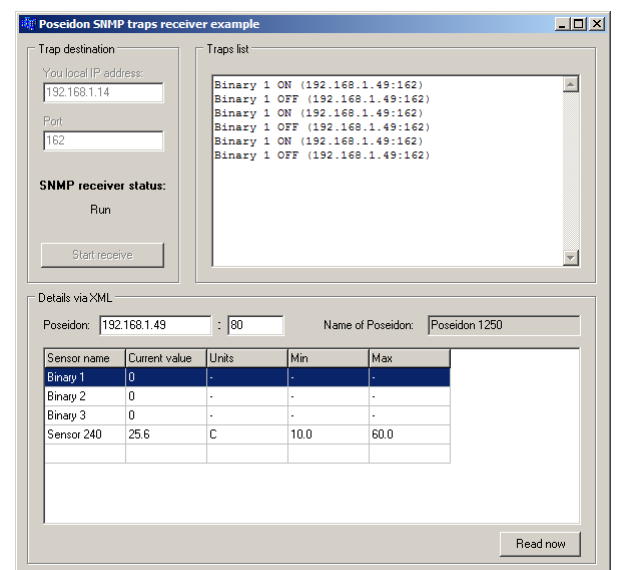
An application to demonstrate UDP search for devices, reading basic network parameters, and downloading and parsing the XML file with sensor and binary input states. Readings can be downloaded **from up to five devices** at a time. Written in Borland C++ Builder using the HWg SDK.

**Functions used:** hwudps\_init, hwudps\_uninit, hwudps\_reinit, hwudps\_search, hwudps\_search\_finish, hwudps\_count, hwudps\_record, hwxml\_init, hwxml\_uninit, hwxml\_open, hwxml\_close, hwxml\_get\_values, hwxml\_get\_values\_cache\_many, hwxml\_count\_modules, hwxml\_finish

### • EX106: SNMP traps receiver

An application to demonstrate UDP search for devices, reading basic network parameters, and downloading and parsing the XML file with sensor and binary input states. Readings can be downloaded from up to five devices at a time. Written in Borland C++ Builder using the HWg SDK.

**Functions used:** hwxml\_init, hwxml\_uninit, hwxml\_open, hwxml\_close, hwxml\_get\_values, hwxml\_get\_values\_cache, hwxml\_finish, hwxml\_error, hwsnmp\_init, hwsnmp\_uninit, hwsnmp\_trap\_rcv\_create, hwsnmp\_trap\_rcv\_create\_finish, hwsnmp\_clr\_traps\_callback, hwsnmp\_traps2callback



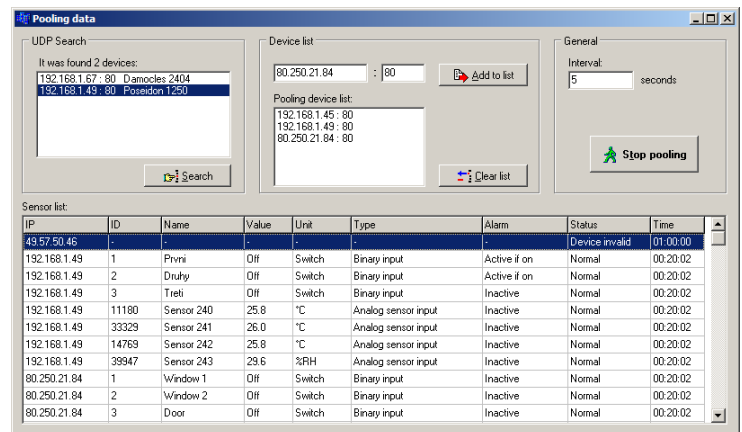
## Demonstrated features

- Receiving traps from multiple devices at a time
- Support for Poseidon and Damocles family
- Parsing known traps and writing them to the log
- Downloading detailed information about all sensors from a specified device

### • EX109: Polling data

The application shows how to search for a device on the local network and add the device to the “device list”. Sensor readings are downloaded periodically from all devices in this list. All readings from all devices are shown in a single sensor list. Written in Borland C++ Builder using the HWg SDK.

**Functions used:** SearchDevice, SearchDone, GetDeviceList, AddToDeviceList, ClearDeviceList, CreatePolling, GetNowPolling, DestroyPolling, LockPolling, UnlockPolling



## Demonstrated features

- Using the PosDamInstWiz.dll high-level library
- Support for Poseidon and Damocles products
- Using the Installation Wizard
- Storing all values from all devices into one large shared table
- Setting the digital outputs
- Setting the safe range thresholds for analog sensors

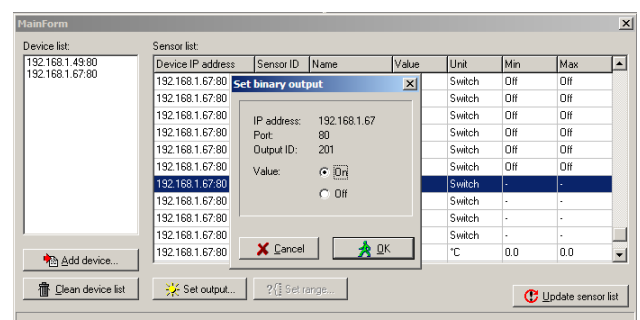
### • EX110: Setting outputs

The application shows how to use the Installation Wizard to add a device to the host application. All sensors and digital inputs/outputs are shown in a single sensor list. It is shown how to change values of digital outputs and sensor safe ranges. Written in Borland C++ Builder using the HWg SDK.

**Functions used:** InstWiz\_Show, InstWiz\_GetDevice, InstWiz\_FirstDevice, InstWiz\_AddDevice, InstWiz\_RemoveDevice, InstWiz\_Clear, AddToDeviceList, ClearDeviceList, CreatePolling, DestroyPolling, GetNowPolling, LockPolling, UnlockPolling, SetBinaryOutput, SetSensorRange

## Demonstrated features

- Using the PosDamInstWiz.dll high-level library
- Support for Poseidon and Damocles products
- Using the Installation Wizard



- Storing all values from all devices into one large shared table
- Setting the digital outputs
- Setting the safe range thresholds for analog sensors

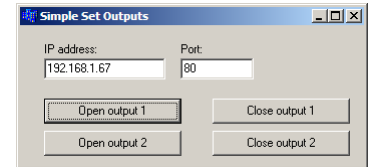
### • EX111: Simple Setting of Outputs

A very simple application shows how to change the values of digital outputs. Written in Borland C++ Builder using the HWg SDK.

**Functions used:** SetBinaryOutput

#### Demonstrated features

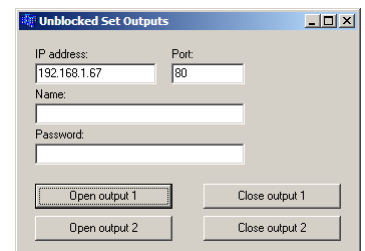
- Using the PosDamSDK.dll high-level library
- Support for Poseidon and Damocles products
- Setting the digital outputs
- No HTTP authentication support



### • EX112: Setting Outputs, Non-blocking

The application shows how to change the values of digital outputs. It shows how to create a non-blocking application that does not “freeze” the graphical user interface. HTTP authentication is supported for access to the device. Written in Borland C++ Builder using the HWg SDK.

**Functions used:** hwxml\_init, hwxml\_uninit, hwxml\_open, hwxml\_close, hwxml\_authenticate\_set, hwxml\_clr\_callback, hwxml\_callback, hwxml\_send\_setup\_xml, hwxml\_finish, hwxml\_get\_setup\_cache



#### Demonstrated features

- Support for Poseidon and Damocles products
- Setting the digital outputs
- HTTP authentication support
- Non-blocking graphical user interface (GUI)

### • EX113: Device Config

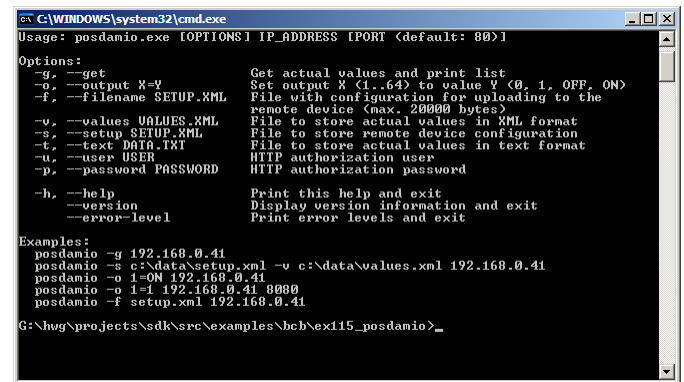
The application shows how to change the configuration of WEB51-based devices through TCP setup. Quiet mode of TCP Setup is used. Written in Borland C++ Builder using the HWg SDK.

## • EX115: Poseidon & Damocles I/O

The PosDamIO utility is designed for batch scripts and applications that need to easily control or log remote sensors, digital inputs and outputs. It is written in C and compiled in Borland C++ Builder using the HWg SDK.

### Demonstrated features

- Displaying a list with sensor states, digital inputs and outputs on the screen, or recording it to a file
- Setting an output using the command line
- Reading the state of an input and setting ErrorLevel according to the returned value
- Downloading and uploading the values.xml file
- Downloading/uploading the setup.xml configuration file of the device – easy device cloning



```

C:\WINDOWS\system32\cmd.exe
Usage: posdamio.exe [OPTIONS] IP_ADDRESS [PORT <default: 80>]

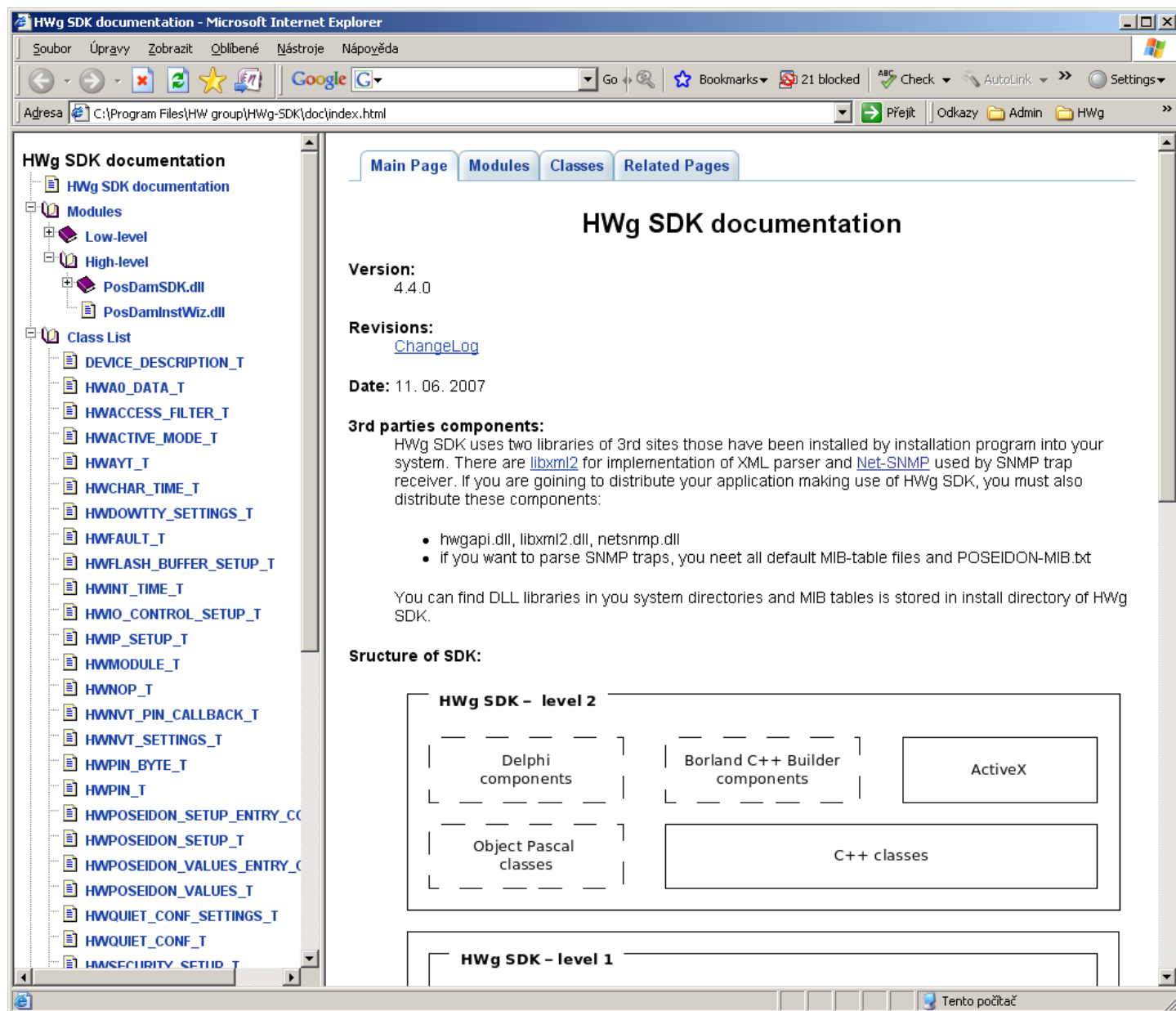
Options:
-g, --get                Get actual values and print list
-o, --output X=Y         Set output X <1..64> to value Y <0, 1, OFF, ON>
-f, --filename SETUP.XML File with configuration for uploading to the
                           remote device (max. 260000 bytes)
-v, --values VALUES.XML File to store actual values in XML format
-s, --setup SETUP.XML   File to store remote device configuration
-t, --text DATA.TXT    File to store actual values in text format
-u, --user USER         HTTP authorization user
-p, --password PASSWORD HTTP authorization password
-h, --help              Print this help and exit
--version              Display version information and exit
--error-level          Print error levels and exit

Examples:
posdamio -g 192.168.0.41
posdamio -s c:\data\setup.xml -v c:\data\values.xml 192.168.0.41
posdamio -o 1=ON 192.168.0.41
posdamio -o 1=1 192.168.0.41 8080
posdamio -f setup.xml 192.168.0.41

G:\hwg\projects\sdk\src\examples\bc\ex115_posdamio>_
  
```

## Documentation for programmers

- Generated automatically using the Doxygen system
- Opens after SDK installation or by clicking [HW group SDK](#) > [HWg SDK main page](#)



## Conclusion:

Register and download the current SDK version on the page:

<http://www.hw-group.com/>

# Poseidon formats and interfaces

## SMS – Interface description

---

### SMS format

```
DEVICE_NAME #ALARM SENSOR1_NAME:VALUE/EXCEEDED_THRESHOLD  
SENSOR1_NAME:VALUE/EXCEEDED_THRESHOLD #STATUS: INP: 0 0 0  
SENS:VALUES_OF_ALL_SENSORS_CONNECTED_TO_UNIT
```

### Description:

- Values are separated with spaces
- DEVICE\_NAME is truncated to a maximum of 8 characters
- SENSOR1\_NAME is truncated to a maximum of 6 characters
- Values are only positive or negative integers – no decimal separators
- The list always shows all sensors, including those in alarm
- Temperature is displayed in the following format: 48C
- Humidity is displayed in the following format: 10%.

### SMS example:

- Device name: **Poseid11**
- Sensors in Alarm:
  - Rack11 = 48.5°C, threshold is 40°C
  - T-Room = 48.3°C, threshold is 35°C
  - H-Room = 10% RH, threshold is 45% RH

Poseid11 ALARM: Rack11(48),T-Room(48),H-Room(10)
--



## E-mail – Interface description

```
<-----61----->
<---10---> <---8--> <-----16-----> <-----15----->
<-5-> <-----15-----> <---11 ---> <-----16-----> <--8--->
```

```
DATE          TIME          Device_NAME      Device_IP
XX.XX.XXXX    XX:XX:XX      XXXXXXXXXXXXXXXX XXX.XXX.XXX.XXX
|-1
Email initiated:  XXXXX  XXXXXXXXXXXXXXXX  XXXXXXXXXXXXXXXX
|-1
```

```
-----
ID      SENSOR_Name      VALUE  UNIT    Safe_RANGE  ALARM
-----
```

```
|-1
ALARM state:
```

```
-----
XXXXX XXXXXXXXXXXXXXXX XXXX.XX XXX  XXXX.X .. XXXX.X XXXXXXXX
|
```

```
|-2
Sensors list:
```

```
-----
XXXXX XXXXXXXXXXXXXXXX XXXX.XX XXX  XXXX.X .. XXXX.X XXXXXXXX
XXXXX XXXXXXXXXXXXXXXX XXXX.XX XXX  XXXX.X .. XXXX.X XXXXXXXX
XXXXX XXXXXXXXXXXXXXXX XXXX.XX XXX  XXXX.X .. XXXX.X XXXXXXXX
```

```
|
|-2
```

```
-----
Device_NAME:    http://Device_IP          00:0A:59:xx:xx:xx
-----
```

### Description

- When a sensor is not available (disconnected, not found), “**-999.99**” is shown
- All texts that exceed the reserved length are truncated
- Device name is 16 characters long, sensor names are 15 chars long
- Readings are listed with two decimal places, safe range thresholds with one
- All numbers in e-mails and logs use a **period** as the decimal separator.
- Besides Alarm, the reason for sending the e-mail can also be “**Periodical report**”

## E-mail subject:

The following strings are appended to the specified e-mail subject:

- **“Test”** for the test e-mail
- **“Periodical report”** for the periodically e-mailed report
- **“T-Room Alarm ACTIVATED”** when the alarm for the sensor named T-Room is activated
- **“T-Room Alarm DEACTIVATED”** when the alarm for the sensor named T-Room is deactivated

## Alarm activation:

```

DATE          TIME          Device_NAME      Device_IP
10.10.2005    15:04:27      Server_room1    192.168.1.20

Email initiated: 48245 T-Room          Alarm ACTIVATED

-----
ID      SENSOR_Name      VALUE      UNIT      Safe_RANGE      ALARM
-----

ALARM state:
-----
48245 T-Room          25.30 °C   -45.0 .. 22.0 Enabled
      1 C-water          OFF                      if OFF

Sensors list:
-----
48245 T-Room          25.30 °C   -45.0 .. 22.0 Enabled
1559 H-Room          53.00 %RH   30.0 .. 80.0 Enabled
  48 T-Srv01         -27.30 °C   -49.0 .. -25.1 Disabled
257 ABCDEFGHIJKLMNO -109.30 °C  -150.0 .. -105.0 Enabled
   1 C-water          OFF                      if OFF
   2 C-AirFl          OFF                      if ON
   3 C-Door1          OFF                      Disabled

-----
Server_room1:  http://192.168.1.20      00:0A:59:00:00:00
-----

```

**Alarm deactivation:**

```

DATE      TIME      Device_NAME      Device_IP
10.10.2005  15:04:27  Server_room1      192.168.1.20

Email  initiated:  48245  T-Room              Alarm DEACTIVATED

-----
ID      SENSOR_Name      VALUE      UNIT      Safe_RANGE      ALARM
-----

ALARM state:
-----
      1  C-water              OFF              if OFF

Sensors list:
-----
48245  T-Room              21.30  °C      -45.0 ..  22.0  Enabled
1559  H-Room              53.00  %RH      30.0 ..  80.0  Enabled
  48  T-Srv01             -27.30  °C      -49.0 .. -25.1  Disabled
 257  ABCDEFGHIJKLMNOPO -109.30  °C      -150.0 .. -105.0 Enabled
      1  C-water              OFF              if OFF
      2  C-AirFl             OFF              if ON
      3  C-Door1             OFF              Disabled

-----
Server_room1:  http://192.168.1.20      00:0A:59:00:00:00
-----

```

**Periodical e-mail:**

```

DATE      TIME      Device_NAME      Device_IP
10.10.2005  15:04:27  Server room1      192.168.1.20

Email  initiated:  Periodical report

-----
ID      SENSOR_Name      VALUE      UNIT      Safe_RANGE      ALARM
-----

ALARM state:
-----
      1  C-water              OFF              if OFF

Sensors list:
-----
48245  T-Room              21.30  °C      -45.0 ..  22.0  Enabled
1559  H-Room              53.00  %RH      30.0 ..  80.0  Enabled
  48  T-Srv01             -27.30  °C      -49.0 .. -25.1  Disabled
 257  ABCDEFGHIJKLMNOPO -109.30  °C      -150.0 .. -105.0 Enabled
      1  C-water              OFF              if OFF
      2  C-AirFl             OFF              if ON
      3  C-Door1             OFF              Disabled

-----
Server_room1:  http://192.168.1.20      00:0A:59:00:00:00
-----

```

## XML – Interface description

Poseidon supports the following XML files:



- **values.xml**  
Small file for periodical polling of sensor readings. Subset of setup.xml – only basic identification and sensor readings are included.
- **setup.xml**  
Complete device configuration

## Reading values using XML

Sensor readings are available as a HTML page intended for human users and as a XML page (**values.xml**). Any application can easily read the values from XML tags.

### XML record example for a temperature sensor:

<code>&lt;Entry&gt;</code>	
<code>&lt;Name&gt;Sensor 16&lt;/Name&gt;</code>	- Sensor name
<code>&lt;Interface&gt;RS485&lt;/Interface&gt;</code>	- Sensor interface
<code>&lt;ID&gt;75&lt;/ID&gt;</code>	- Unique identification within the device
<code>&lt;Value&gt;27.8&lt;/Value&gt;</code>	- Current temperature, string with a decimal point, without measure
<code>&lt;Min&gt;10.0&lt;/Min&gt;</code>	- <b>Lower alarm limit</b> , string with a decimal point, without measure
<code>&lt;Max&gt;50.0&lt;/Max&gt;</code>	- <b>Upper alarm limit</b> , string with a decimal point, without measure
<code>&lt;Hyst&gt;0.0&lt;/Hyst&gt;</code>	- <b>Hysteresis range</b> , string with a decimal point, without measure
<code>&lt;SNMPTrap&gt;1&lt;/SNMPTrap&gt;</code>	- <b>SNMP Trap</b> , 0 = off, 1 = on
<code>&lt;EmailSMS&gt;0&lt;/EmailSMS&gt;</code>	- <b>E-mail, SMS</b> , 0 = off, 1 = on
<code>&lt;AlarmState&gt;Active&lt;/AlarmState&gt;</code>	- <b>Alarm</b> , Active or Inactive
<code>&lt;Color&gt;0&lt;/Color&gt;</code>	- <b>Line color</b> , shows state of a sensor in this line.
<code>&lt;UnitType&gt;C&lt;/UnitType&gt;</code>	
<code>&lt;/Entry&gt;</code>	

**Note:** You can back up your device configuration by downloading the setup.xml file.

## Writing values to the device using XML

The setup.xml and values.xml files can be uploaded to the Poseidon unit, if allowed by the protective measures (HTTP password, IP address filter, DIP switch setting).

For downloading or uploading XML files from/to the Poseidon unit, we recommend the utility attached to Application Note 29: **AN29: PosDamIO controls outputs through the command line**

## Setup.xml format – version 2.37

Release notes for the actual version can be always found at <http://new.hwgroup.cz/cs/node/4561>

### Information Section

<Agent>	- Read only device parameters group
<Version>1.1.12</Version>	- Device firmware version (Read only)
<XmlVer>2.37</XmlVer>	- XML file version (Read only)
<DeviceName>Poseidon in kitchen</DeviceName> only (64 chars)	- Device name – User configurable, Identical with <SysName> value, here read only (64 chars)
<Features>	(Here read only, change in <Network> part of XML)
<RS485/>	- Basic features of the device
<Wire1/>	
<BinaryIn/>	
<BinaryOut/>	
<CommMonitor/>	
<DHCP/>	
<SNTP/>	
<SNMP/>	
<SMTP/>	
<Modbus/>	
<GSM/>	
<DataLogger/>	
<Report/>	
<Telnet/>	
<SOAP/>	
<WSDL/>	
<ValuesReport/>	
<AlarmReminder/>	
<Portal/>	
</Features>	
<Model>34</Model>	- Technical device type – available also over UDP Setup (5 chars)
<VendorID>10</VendorID>	- Vendor ID number – 0 .. 65565 16. bit number in ASCII
<MAC>00:0A:59:03:0C:91</MAC>	- Unique device MAC address
<Uptime>564620</Uptime>	- Total running time since last restart
<Title>Poseidon model 1250</Title>	- Customizable device title – Top of the HTML page (Read only), Marketing device name (more in customization) (max 32 chars)
<Contact>Information: www.HW-group.com</Contact>	- User definable contact message, HTML code support (max 254 chars) (Read only here, can be updated over TCP setup only, more in customization)
</Agent>	
<CommMonitor>	- Communication Monitor
<Modbus>0</Modbus>	- Modbus monitoring (0/1)
<XML_HTTP>0</XML_HTTP>	- XML monitoring (0/1)
<SNMP>0</SNMP>	- SNMP monitoring (0/1)
<Timeout>0</Timeout>	- Period of Communication Monitor (in seconds)
</CommMonitor>	

Input, Output and Sensor Section**<BinaryInSet>**

&lt;Entry&gt;

&lt;ID&gt;1&lt;/ID&gt;

unique per device, 1..64 are reserved for binary inputs

&lt;Name&gt;Binary 1&lt;/Name&gt;

&lt;Value&gt;0&lt;/Value&gt;

&lt;Alarm&gt;0&lt;/Alarm&gt;

inactive

&lt;Delay&gt;0&lt;/Delay&gt;

for Alarm End reaction)

&lt;State&gt;0&lt;/State&gt;

Email or Trap not activated), 2 = alarm activated

&lt;SNMPTrap&gt;0&lt;/SNMPTrap&gt;

&lt;Email&gt;0&lt;/Email&gt;

&lt;SMS&gt;0&lt;/SMS&gt;

&lt;ApDelta&gt;0&lt;/ ApDelta&gt;

increase/decrease larger than AutoPush delta parameter.

&lt;/Entry&gt;

&lt;Entry&gt;

&lt;ID&gt;2&lt;/ID&gt;

&lt;Name&gt;Binary 2&lt;/Name&gt;

&lt;Number&gt;I2&lt;/Number&gt;

&lt;Value&gt;0&lt;/Value&gt;

&lt;Alarm&gt;2&lt;/Alarm&gt;

&lt;Delay&gt;0&lt;/Delay&gt;

&lt;State&gt;0&lt;/State&gt;

&lt;SNMPTrap&gt;0&lt;/SNMPTrap&gt;

&lt;Email&gt;0&lt;/Email&gt;

&lt;SMS&gt;0&lt;/SMS&gt;

&lt;ApDelta&gt;0&lt;/ ApDelta&gt;

&lt;/Entry&gt;

&lt;Entry&gt;

&lt;ID&gt;3&lt;/ID&gt;

&lt;Name&gt;Binary 3&lt;/Name&gt;

&lt;Number&gt;I3&lt;/Number&gt;

&lt;Value&gt;0&lt;/Value&gt;

&lt;Alarm&gt;2&lt;/Alarm&gt;

&lt;Delay&gt;0&lt;/Delay&gt;

&lt;State&gt;0&lt;/State&gt;

&lt;SNMPTrap&gt;0&lt;/SNMPTrap&gt;

&lt;Email&gt;0&lt;/Email&gt;

&lt;SMS&gt;0&lt;/SMS&gt;

&lt;ApDelta&gt;0&lt;/ ApDelta&gt;

&lt;/Entry&gt;

&lt;/BinaryInSet&gt;

**<BinaryOutSet>**

&lt;Entry&gt;

&lt;ID&gt;151&lt;/ID&gt;

device,

&lt;Name&gt;RTS&lt;/Name&gt;

&lt;Type&gt;1&lt;/Type&gt;

&lt;Mode&gt;0&lt;/Mode&gt;

&lt;Value&gt;0&lt;/Value&gt;

&lt;CondInputID&gt;74&lt;/CondInputID&gt;

&lt;Trigger&gt;-18.5&lt;/Trigger&gt;

&lt;/Entry&gt;

- Binary dry contact inputs (next only "Binary input")

- Entry identification, ID (1..64), source for &lt;CondInputID&gt; for output control, ID in

- Defined name of the input (text string, 20 chars)

- Current value 0/1 (Read only)

- alarm settings for this Binary input – 1 byte 0 = active if on, 1 = active if off, 2 =

- 0..255 Time delay in seconds to prolong Alarm state reaction. (used for Alarm Start even

Similar to Hysteresis but in seconds.

- Current sensor state 0 = normal, 1 = Alarm activated but not send (Alarm sending

- SNMP Trap alarm enable 0 = don't send, 1 = send if value out of SafeRange

- E-mail alarm enable 0 = don't send, 1 = send if value out of SafeRange

- SMS alarm enable 0 = don't send, 1 = send if value out of SafeRange

- AutoPush is a function allowing sending of measured data in case of value

- Binary input 2

- Binary input 3

- Binary outputs settings &amp; values

- Entry identification, ID (151..214), source for &lt;CondInputID&gt;, ID in unique per

151..200 are reserved for outputs

- Output name (Read only)

- Type of the binary outputs

0: X/Y = "On" / "Off" (Relay output),

1: X/Y = "On (+10V)" / "Off (-10V)" (RTS output)

2: X/Y = "On (+10V)" / "Off (0V)" (DTR output)

Output control mode (Manual / Local + condition)

0 = Manual output control (value defined by Value tag)

1 = Local output control (On if any alarm)

2 = Local output control (On if value equal to Trigger)

3 = Local output control (On if value higher than Trigger)

4 = Local output control (On if value lower than Trigger)

5 = Local output control (On if Alarm on)

- 0/1 Current output value

0 = Y ("Off" / "Off (-10V)" / "Off (0V)")

1 = X ("On" / "On (+10V)" / "On (+10V)")

R/W for the „Manual output control”

R for the „Local output control” (On if any alarm)

- Condition related input ID – Poseidon 3268 future

- Trigger value for condition – Poseidon 3268 future

<Entry> <ID>152</ID> <Name>DTR</Name> <Type>2</Type> <Value>0</Value> <Mode>3</Mode> <CondInputID>75</CondInputID> <Trigger>22.5</Trigger > </Entry>	- Entry identification
</BinaryOutSet>	
<SenSet> <Entry> <ID>57856</ID>  <SensId>57856</SensId>  <Name>Sensor 240</Name> <Units>C</Units>  <Value>23.0</Value> <Calib>-0.15</Calib>  <Min>-1.5</Min> <Max>24.6</Max> <Hyst>0.0</Hyst>  <SNMPTrap>1</SNMPTrap> <Email>0</Email> <SMS>0</SMS> <Delay>0</ Delay> for Alarm End reaction)  <ApDelta>0</ ApDelta> increase/decrease larger than AutoPush delta parameter. <State>0</State> sending by Email or Trap not activated),  </Entry>  <Entry> <ID>74</ID> <Code>74</Code> <Name>Sensor 23</Name> <Units>C</Units> <Value>23.8</Value> <Calib>0.19</Calib> <Min>10.0</Min> <Max>60.0</Max> <Hyst>0.0</Hyst> <SNMPTrap>0</SNMPTrap> <EmailSMS>0</EmailSMS> <ApDelta>0</ ApDelta> <State>0</State> </Entry> </SenSet>	- All detected sensors  - Entry identification, ID address of the sensor (Read only), source for <CondInputID>, ID in unique per device, 48..122 and 256..65535 are reserved for sensors  - Full 1-Wire ID address of the sensor (Read only), 1-Wire ID is unique. 1-Wire sensors only - Defined name of the sensor (text string, 15 chars) - Unit of send value "C" for temperature, "%RH" for humidity, "V" for voltage "mA" for current "s" for Switch (0/1) "p" for counter pulses (1/10 digit can be used) etc... - Current value, one decimal value, decimal separator is "." (Read only) - Sensors calibration shift value (Value = Raw sensor value + Calib) Not implemented yet - ready to use in the future - SafeRange minimal limit - SafeRange maximal limit - Hysteresis (non sensitivity range) value  - SNMP trap alarm enable 0 = don't send, 1 = send if value out of SafeRange - E-mail alarm enable 0 = don't send, 1 = send if value out of SafeRange - SMS alarm enable 0 = don't send, 1 = send if value out of SafeRange - 0..255 Time delay in seconds to prolong Alarm state reaction. (used for Alarm Start even Similar to Hysteresis but in time - AutoPush is a function allowing sending of measured data in case of value  - Current sensor state 0 = normal, 1 = Alarm activated (value out of SafeRange) but not send (Alarm 2 = value out of SafeRange - Alarm sent, 4 = sensor invalid (not connected)

**RS-232/GSM Settings**

<SerialPort>	
<E>1</E>	- Enable Serial Port 0= Disabled, 1=GSM modem, 2=RFID reader
</SerialPort>	
<SMS>	
<Function>0</Function>	- Function 0=Local Modem, 1=Remote GSM GW
<Ring>0</Ring>	- Enable Ring alert (0/1)
<Dest>1</Dest>	- Remote SOAP GW destination number
<Module>Not enabled</Module>	- FOUND / NOT FOUND of GSM serial terminal
<CenterNmr/>	- SMS center Number
<Recp1/>	- SMS1 destination Number
<Recp2/>	- SMS2 destination Number
<Recp3/>	- SMS2 destination Number
<Recp4/>	- SMS2 destination Number
<Recp5/>	- SMS2 destination Number
<State>0</State>	- Test processing report
<Message/>	- SMS Test report message from last SMS test
</SMS>	

**Destination Section**

<SnmpTraps>	- SNMP Traps settings
<Entry>	
<Idx>1</Idx>	- Entry identification
<Community>public</Community>	- SNMP Community settings (32 chars)
<IPAddr>192.168.1.39</IPAddr>	- SNMP trap destination IP address
<Port>162</Port>	- SNMP trap destination port
<E>1</E>	- Enable / Disable destination (0/1)
</Entry>	
<Entry>	
<Idx>2</Idx>	
<Community></Community>	
<IPAddr></IPAddr>	
<Port></Port>	
<E>0</E>	
</Entry>	
<Entry>	
<Idx>3</Idx>	
<Community></Community>	
<IPAddr></IPAddr>	
<Port></Port>	
<E>0</E>	
</Entry>	
<Entry>	
<Idx>4</Idx>	
<Community></Community>	
<IPAddr></IPAddr>	
<Port></Port>	
<E>0</E>	
</Entry>	
<Entry>	
<Idx>5</Idx>	
<Community></Community>	
<IPAddr></IPAddr>	
<Port></Port>	
<E>0</E>	
</Entry>	
</SnmpTraps>	

**Configuration and Services Section**

<Global>	- Global settings
<Units>Celsius</Units>	- Temperature units displayed in a Flash setup interface "Celsius", "Fahrenheit", "Kelvin"
<HWSec>Disabled</HWSec>	- HW DIP security value - "Enabled" / "Disabled"
</Global>	
<Network>	- Network settings
<Name>Poseidon in kitchen</Name>	- Device name (64 chars) Identical with item <Agent><DeviceName>, here RW
<DHCP>0</DHCP>	- 0/1 - Enable DHCP, when enabled show assigned IP values.
<IPAddr>192.168.1.80</IPAddr>	- IP address of the device (Read only when DHCP enabled)



<Submask>255.255.255.0</Submask>	- Value of the IP subnet mask (Read only when DHCP enabled)
<Gateway>192.168.1.100</Gateway>	- IP address of the Gateway (Read only when DHCP enabled)
<DNSPrimary>147.230.16.1</DNSPrimary>	- Primary DNS server (you have to set DNS server as IP address) (Read only when DHCP enabled)
<DNSSSecondary>213.180.44.4</DNSSSecondary>	- Secondary DNS server (Read only when DHCP enabled)
<HTTPPort>80</HTTPPort>	- Internal device WEB server port
<TelnetPort>99</TelnetPort>	- Telnet setup (TCP setup) port. "0" = TCP setup disabled
<SNMPPort>161</SNMPPort>	- SNMP pooling port settings
</Network>	
<SOAP>	- SOAP settings
<Entry>	
<Idx>1</Idx>	- Destination ID
<E>1</E>	- Destination Enable 0/1
<Server>192.168.1.36</Server>	- Destination IP
<Port>80</Port>	- Destination TCP Port
<Route>service.xml</Route>	- Name of XML file
</Entry>	
</SOAP>	
<Report>	- Alarm Reminder & Periodic status
<Entry>	
<Idx>1</Idx>	- ID1 – Periodical Status
<E>0</E>	- Enable Function 0/1
<Period>60</Period>	- Period (in minutes)
</Entry>	
<Entry>	
<Idx>2</Idx>	- ID2 Alarm Reminder
<E>0</E>	- Enable Function 0/1
<Period>5</Period>	- Period (in minutes)
</Entry>	
</Report>	
<Portal>	
<PushPeriod>30</PushPeriod>	- period of sending the data to a remote server. This value is being set by a portal.
<E>1</E>	- enables or disables the portal function
<Name>vitolmr</Name>	- username assigns the device to a user account. Provided by a portal administrator
<Pswd>qehgls</Pswd>	- Provided by a portal administrator together with a username
<ServerAddress>www.sensdesk.com/portal.php</ServerAddress>	- full URL of the remote server
<PortalPort>80</PortalPort>	- Portal listening port
<PortalMessage><a href="http://www.sensdesk.com:80/sensdesk/device/779" target="_blank">SensDesk.com: Check sensor online.</a></PortalMessage>	- Portal communication status
<Portal_PushTimer>7</Portal_PushTimer>	- Counts out the time to the next standard data sending
<Portal_LogTimer>7</Portal_LogTimer>	- Shows the time left to next data saving to a internal memory
<Portal_ApBlockTimer>0</Portal_ApBlockTimer>	- Shows the time needed before sending another AutoPush after the previous AutoPush process. This value is being set by a portal.
</Portal>	
<MIBIISysGroup>	- MIB II settings
<SysContact>support@HWgroup.cz</SysContact>	- MIB's administrator e-mail (64 chars)
<SysName>Poseidon in kitchen </SysName>	- MIB's database name (64 chars) Identical with item <Agent><DeviceName>, here R/W
<SysLocation></SysLocation>	- MIB's system database placement (64 chars)
</MIBIISysGroup>	
<Email>	- E-mail settings
<Server></Server>	- DNS address or IP address of remote SMTP server (40 chars)
<Port>25</Port>	- Port for communication with remote SMTP server
<From>user@domain.com</From>	- Email address of sender (40 chars)
<Subject>Subject_0</Subject>	- Subject of Email message (50 chars)
<Auth>0</Auth>	- SMTP server Authentication (0 = not required, 1 = required, 3= TLS)
<Secure>0</Secure>	- SMTP Secure communication (0 = not required, 1 = TLS)
<Name>User login name</Name>	- SMTP authentication Login name (40 chars)
<Pswd></Pswd>	- SMTP authentication Password (20 chars)
<Message></Message>	- SMTP server report message from last TEST EMAIL (100 chars)
</Email>	
<MailDest>	- Email destination definition

<Entry>	
<Idx>1</Idx>	- Alert email
<To>recip@domain.com</To>	- Recipient of Email (40 chars)
<Cc>recip@domain.com</Cc>	- Recipient of Email (40 chars)
<Cc1>recip@domain.com</Cc1>	- Recipient of Email (40 chars)
<Cc2>recip@domain.com</Cc2>	- Recipient of Email (40 chars)
<Cc3>recip@domain.com</Cc3>	- Recipient of Email (40 chars)
</Entry>	
<Entry>	
<Idx>2</Idx>	- LOG periodic report email
<To>recip@domain.com</To>	- Recipient of Email (40 chars)
</Entry>	
</MailDest>	
<Time>	- Time settings
<SNTPServer>ntp1.sth.netnod.se</SNTPServer>	- DNS address or IP address of SNTP server (time server) (40 chars)
<TimeShift>1</TimeShift>	- time shift (in hours)
<Date>31.12.1970</Date>	- date
<Time>03:09:33</Time>	- time
</Time>	
<DataLogger>	
<StorePeriod>360</StorePeriod>	- Log period in sec. Minimal is 1 cycle through sensor and is depend on sensor count. 0 = Logger disabled, max. value is 65535
<LogCapacity>100.2.23</LogCapacity>	- estimated log capacity (How long device can storage data.) format hours.mins.secs it is only proximate value
<Report>	- Periodic email with current value and logged data
<E>0</E>	- Enable periodic reporting
<Period>5</Period>	- Reporting period in min. Minimal is 5 minutes
<Erase>0</Erase>	- 0/1, 1=Erase reported (delivered to SMTP server) values from Logfile
<LogName>spilog</LogName>	- Name of logfile
</Report>	
<LogCapacity>0.0.0</LogCapacity>	
</DataLogger>	

### Security Section

<HTTPIPFilter>	- HTTP access filter values
<IPAddr>0.0.0.0</IPAddr>	- IF ((IPAddr AND Mask) XOR (TestAddress AND Mask)) = 0 than access enabled
<Mask>0.0.0.0</Mask>	
</HTTPIPFilter>	
<SNMPIPFilter>	- SNMP access filter
<IPAddr>0.0.0.0</IPAddr>	- IF ((IPAddr AND Mask) XOR (TestAddress AND Mask)) = 0 than access enabled
<Mask>0.0.0.0</Mask>	
</SNMPIPFilter>	
<SnmpAccess>	- SNMP access settings
<Entry>	
<Idx>1</Idx>	- Entry identification
<Community>public</Community>	- Community name (32 chars)
<R>1</R>	- Read access (0/1)
<W>0</W>	- Write access (0/1)
<E>1</E>	- Enable / Disable community (0/1)
</Entry>	
<Entry>	
<Idx>2</Idx>	
<Community>private</Community>	
<R>1</R>	
<W>1</W>	
<E>1</E>	
</Entry>	
</SnmpAccess>	
<User>	- secure of HTTP server by password
<Entry>	- Read only access to setup.xml and Flash setup interface
<Idx>1</Idx>	

<Name></Name>	- Name (32 chars)
<Pswd></Pswd>	- Password (filled by "**")(32 chars)
</Entry>	
<Entry>	- Read &Write Outputs, Read only device configuration
<Idx>2</Idx>	
<Name></Name>	- Name
<Pswd></Pswd>	- Password (you can see current Password in Flash Setup)
</Entry>	
<Entry>	- Read&Write access to setup.xml and Flash setup interface
<Idx>3</Idx>	
<Name></Name>	- Name
<Pswd></Pswd>	- Password (you can see current Password in Flash Setup)
</Entry>	
</User>	
</Root>	

## Logger format

Logged data from the logger:

- x.x.x.x/**spilog.bin** binary format of the logged data
- x.x.x.x/**spilog.txt** Text format (CSV) of the logged data
- x.x.x.x/**spilog.del** call this file to delete logged data and start logging again

Logger is circuit buffer = oldest data are rewrite by newer data.

### spilog.txt

yyyy/mm/dd;hh:mm:ss;log\_type;log\_group;value\_count;value\_id[0];value[0];value\_id[1];value[1]; ...  
value\_id[value\_count - 1];value[value\_count - 1];

- **log\_type** 0 - normal (periodical), 1 - alarm
- **log\_group** Type of sensors
  - 0 - Wire1 sensors,
  - 1 - RS232 sensors,
  - 2 - RS485 sensors,
  - 3 - inputs,
  - 4 – outputs
- **value\_count** # of values in this record
- **value\_id[i]** Unique ID in the Poseidon device
  - 1..64 – Digital inputs,
  - 128.. – Digital outputs,
  - 65 ('A') .. 122 ('z') - RS485 sensors,
  - 0 .. 1 - RS232 sensors,
  - 256 .. 65535 - Wire1 sensors
- **value[i]** the most important number in this babel of digits

#### spilog.txt SCV file format example

```
2007/04/02;14:26:51;0;0;7;54896;243;28078;242;27385;243;25539;245;55499;243;14127;243;4127;246;
2007/04/02;14:26:51;0;2;2;74;245;106;359;
2007/04/02;14:26:51;0;3;3;1;0;2;0;3;0;
2007/04/02;14:26:51;0;4;2;128;0;129;0;
```

## File spilog.bin

```

u_char  occupied_bytes;    // record length (total include length)
u_char  type;              // log_type - type of record
time_t   time;             // time of sampling (u_long)

u_char  type;              // log_group - sensor type
u_char  count;             // value count

u_short id;                // value_id[i]
int      val;              // value[i]

```

### Aspilog.bin format

- Log current values when Alarm started and finisher
- log digital inputs and outputs

```

/*
 * RECORD STRUCTURE
 * spi_record_header|data_record_header|data_1|data_2|...|data_n
 *
 */

typedef struct {
    u_char  occupied_bytes;    // record length (data + TSpiRecordHeader)
    u_char  type;              // Record type: LOG_FILE_DATA_TYPE: LOG - 0, ALARM - 1
    time_t   time;            // sampling time (u_long)
} TSpiRecordHeader;

typedef struct {
    u_char  type;              // Sensor type 0 - Wirel sensors, 1 - RS232 sensors, 2 - RS485
    sensors, 3 - inputs, 4 - outputs
    u_char  count;
} TDataRecordHeader;

typedef struct {
    u_short id;
    int      val;
} TIdVal;

typedef enum
{ WIRE_1_TEMP = 0, RS232_TEMP, RS485_TEMP, BINARY_IN, BINARY_OUT }
DataTypes;

```

## Modbus over TCP – Interface description

Modbus is a communication protocol designed for measuring devices that communicate over RS-485 or RS-232 (sometimes named Modbus RTU). The Modbus protocol itself allows to share the **memory area for variables**, e.g. the readings, over one of the physical interfaces. Modbus/TCP is an extension of this protocol for communication over Ethernet.

Its advantages include easy implementation in industrial visualization systems. Current Modbus/TCP description for Poseidon2 can be found on websites <http://new.hwgroup.cz/cs/node/4509>

### Mapping of variables for the Modbus/TCP protocol

Analog quantities					
Address	I/O	Type	Functions	Units	Description
100	Input	Int	4		Current number of installed (configured in Setup) sensors
101-10x	Input	Int	4	0.1°C (K, F)	Current value of the sensor No. 1 through x, where x is the value at address 100. Units are configured in WEB Setup.

Binary values					
Address	I/O	Type	Functions	Units	Description
100 - 102	In	bit	2	0 / 1	Current values of binary inputs
200	In	bit	1	0 / 1	Reads the current value of the DTR output
200	Out	bit	5	0 / 1	Sets the value of the DTR output
201	In	bit	1	0 / 1	Reads the current value of the RTS output
201	Out	bit	5	0 / 1	Sets the value of the RTS output

The Poseidon2 works as a TCP Server at port 502 (Modbus standard). The Modbus/TCP communication takes place using the given addresses. For details, see <http://www.modbus.org>.

**Caution:** Modbus/TCP implementation support requires setting the "**Slave ID**" variable to number 2. Check the setting of this variable in case you are unable to establish a connection. (The actual name may differ in your software – it used to be an address to distinguish multiple devices on a RS-485 line in case of Modbus/RTU).

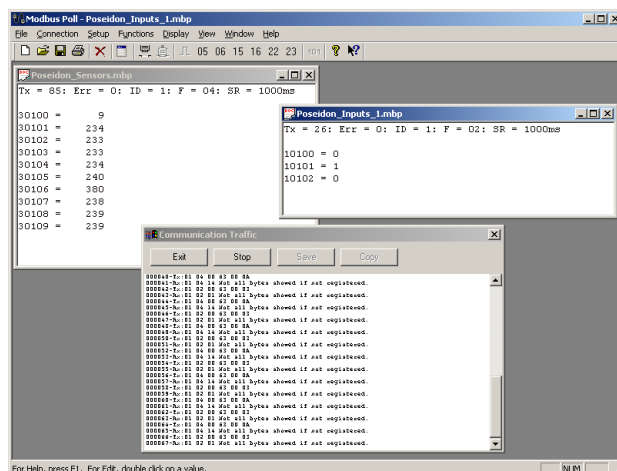
**Note:** For details about Modbus/TCP, see on HWgroup websites **AN28: Damocles family & Modbus/TCP**

## Testing Modbus/TCP with “Modbus Poll 3.20”

The supplied CD contains the Modbus Poll utility, which can serve as a simple client for reading Modbus/TCP values – for 30 days after it is run for the first time.

In the demo mode, you can see the sensor readings and dry contact states for the first 4 minutes.

Configuration files that define the addresses of sensors and digital inputs for the online Poseidon demo, “Poseidon Sensors.mbp” and “Poseidon Inputs.mbp”, are available on the CD or as an archive on the Internet.

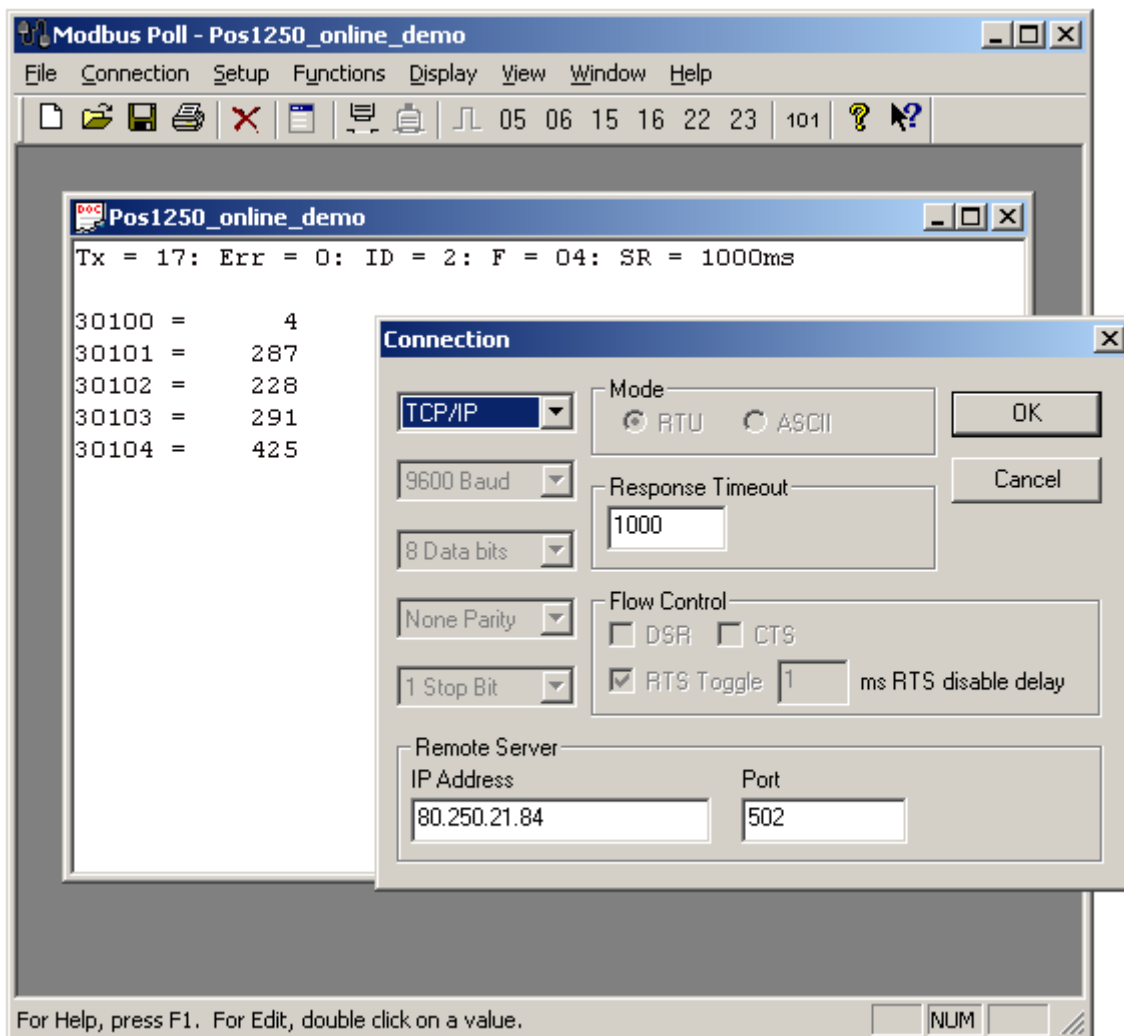


Open these two files, select a TCP/IP connection and the address of our online demo, and establish the connection.

## Connecting over Modbus/TCP to our online demo

A permanently running Poseidon2 unit with a public IP address is installed in the HWg office. The current address, as well as a link to that address, is available at our website in the “Site Map” section.

All values are multiplied by 10 because decimal values are not supported.



## HWg-netGSM - remote SMS gateway protocol for HW group products

---

*Current protocol description can be found on <http://new.hwq.cz/cs/node/4648>*

### netGSM protocol for users

netGSM protocol is designated for sharing one GSM modem, connected to one unit, with other devices in the same network. This allows several HW group devices to send alarm SMS messages via one device (one SIM card). This solution decreases the operating costs.

### netGSM function consists of one server and several clients:

- 1) **Server part** is HWg-SMS-GW device or Poseidon 4002/2250 with a GSM modem.
- 2) **Clients** can be software applications, other Poseidon units, HWg-PWR and others.

### Functions provide by netGSM

- SMS sending
- Drop-calling remote telephone number
- Receiving SMS (only for HWg-DCD)
- Receiving drop-calls (only for HWg-DCD)

### Devices supporting netGSM

#### netGSM Server (contains a SIM card)

- HWg-SMS-GW
- HWg-SMS-GW2
- Poseidon 2250 + external GSM modem
- Poseidon 4002 + external GSM modem
- Poseidon 4001 + external GSM modem
- Poseidon2 4002 + external GSM modem

#### netGSM Client (sends SMS messages)

- Poseidon 2250
- Poseidon 4002
- Poseidon2 – all models
- HWG-WLD
- HWG-PWR3/12/25
- HWG-DCD
- Nagios Plug in
- Communication examples can be found in HWg-SDK



## Settings example for two Poseidon units re-sending SMS messages through the second unit

Two Poseidon units are used for the settings:

- 192.168.2.23 Poseidon 4002 with connected GSM modem
- 192.168.1.67 Poseidon 3266 sending SMS messages via Poseidon 4002

### Poseidon 4002 settings with GSM modem connected

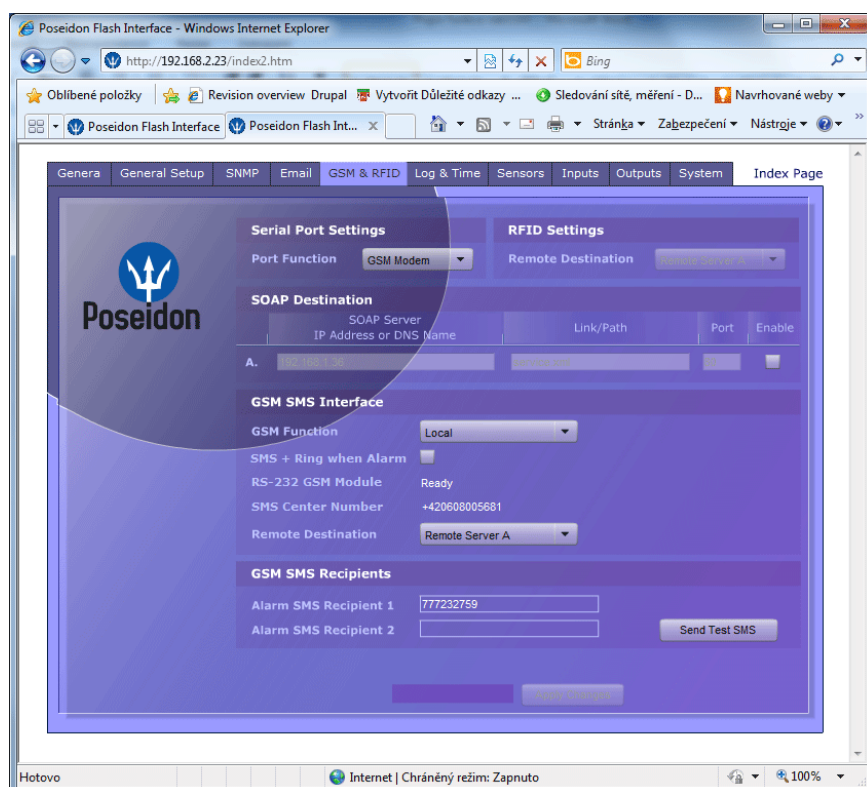
With default settings it is necessary to first activate the GSM modem in **Serial port Settings** and then set the **GSM Function** to *Local*. Deactivation of **SOAP destination** is optional, just as **SMS+ Ring when Alarm** option

### XML settings example

```

<SerialPort>
  <E>1</E>
</SerialPort>
<SMS>
  <Function>1</Function>
  <Ring>0</Ring>
  <Dest>1</Dest>
  <Module>Ready</Module>
  <CenterNmr>+420608005681</CenterNmr>
  <Recp1>777232759</Recp1>
  <Recp2 />
  <State>13</State>
  <Message>OK</Message>
</SMS>
<RFID>
  <Dest>1</Dest>
</RFID>
<SOAP>
  <Entry>
    <Idx>1</Idx>
    <E>0</E>
    <Server>192.168.1.36</Server>
    <Port>80</Port>
    <Route>service.xml</Route>
  </Entry>
</SOAP>

```



## Poseidon 3266 (Transmitting device) settings

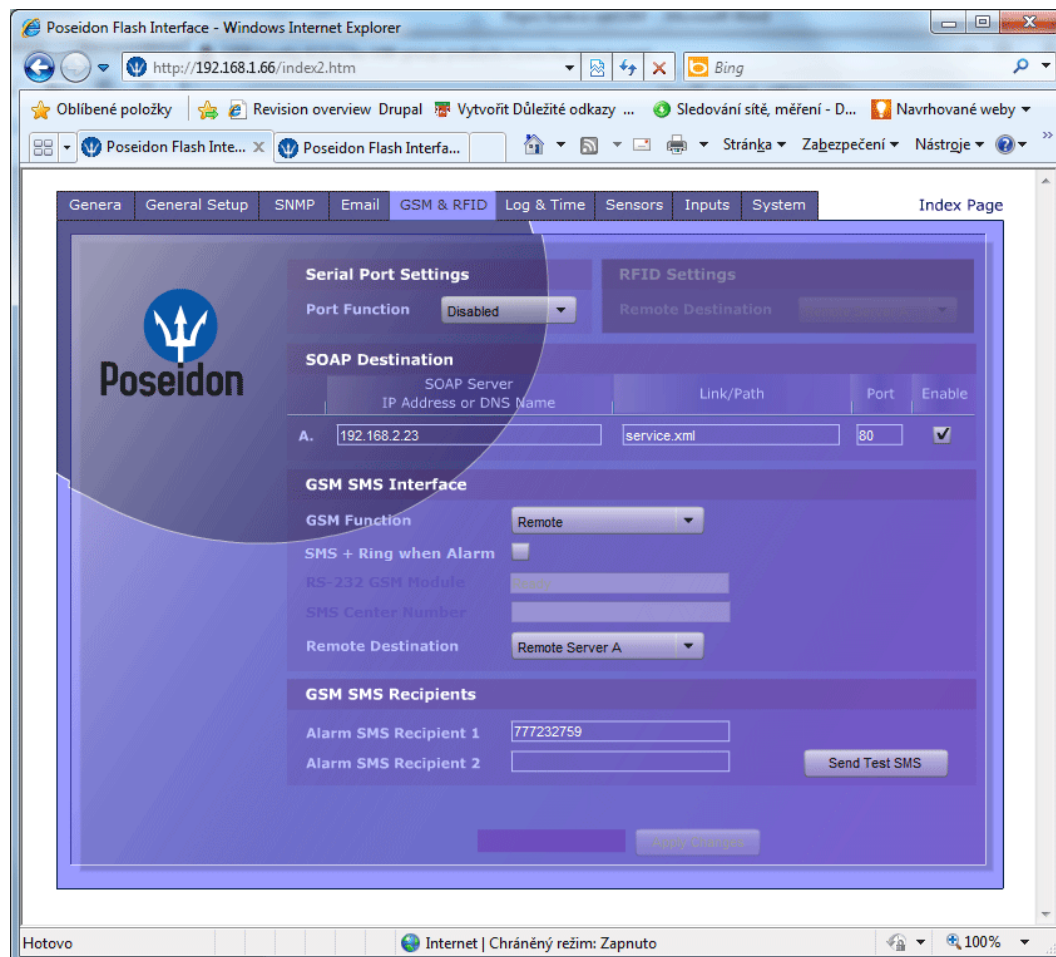
In default settings it is vital to keep the correct remote Poseidon IP address settings and settings of phone numbers for sending SMS messages. **SMS+ Ring when Alarm** function is optional.

### Settings example in XML

```

=<SerialPort>
  <E>0</E>
</SerialPort>
=<SMS>
  <Function>0</Function>
  <Ring>0</Ring>
  <Dest>1</Dest>
  <Module>Ready</Module>
  <CenterNmr />
  <Recp1>777232759</Recp1>
  <Recp2 />
  <State>13</State>
  <Message>OK</Message>
</SMS>
=<SOAP>
=<Entry>
  <Idx>1</Idx>
  <E>1</E>
  <Server>192.168.2.23</Server>
  <Port>80</Port>
  <Route>service.xml</Route>
</Entry>
</SOAP>

```



## netGSM protocol for programmers

### Poseidon SOAP Service Interface (PSSI)

Configure hostname/port on HWg-SMS-GW where the service request will be sent.

### Services (common API, SOAP interface)

Service	Functions	Parameters	Result
<b>QueueAdd</b>	put, put into the queue	XML with data, cmd=SMS, Call	rslt=0, id=nnn: ID of the record
<b>QueuePick</b>	get, get from the queue	-	XML with data
<b>QueueStatus</b>	info about the queue	queue type:qRfid, qGsmOut, qGsmIn <i>what about 'list' for IDs ?</i>	max=5, cnt=2, missed=0
<b>RecordStatus</b>	info about the request	id=nnn	for example retry=5
<b>RecordDelete</b>	request cancellation	id=nnn	rslt=0: OK
<b>NotificationEvent</b>	something was received	XML with data	
<b>Command</b>	(action?, for example a request of values)	XML with data	
<b>ServiceStatus</b>	info about the service	-	rslt=disabled

## netGSM

SMS sending or drop-call requests. An ID is assigned after the request is queued, with which it is possible to ask for the request state.

Sent commands are **QueueAdd queue=qGsmOut, cmd={SMS|Call}**, phone number and a message text, or cmd=ringNotify, phone number. Reply is rslt=0, id=nnn: request was placed into queue, or rslt=err\_no: request was not placed into queue

If SMS or drop-call is received: NotificationEvent, v xml cmdType, phoneNumber[, message text]

## Communication examples

Every following communication has to be put between the following tags (instead of Data comment):

```
<soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:pos="poseidonService.xsd">
<soapenv:Header/>
  <soapenv:Body>
    <!-- Data -->
  </soapenv:Body>
</soapenv:Envelope>
```

## Put SMS into the queue

```
<pos:QueueAdd>
  <Queue>GsmOut</Queue>
  <Gsm>
    <Cmd>SMS</Cmd>
    <Nmr>00420800123456</Nmr>
    <Text>Poseidon: halo halo</Text>
  </Gsm>
</pos:QueueAdd>
```

### Reply:

```
<pos:QueueAdd>
  <Rslt>0</Rslt>
  <ID>120</ID>
</pos:QueueAdd>
```

## Put drop-call into the queue

```
<pos:QueueAdd>
  <Queue>GsmOut</Queue>
  <Gsm>
    <Cmd>Call</Cmd>
    <Nmr>00420800123456</Nmr>
  </Gsm>
</pos:QueueAdd>
```

### Reply:

```
<pos:QueueAdd>
  <Rslt>0</Rslt>
  <ID>121</ID>
</pos:QueueAdd>
```

## Get from the queue (non-specified request)

```
<pos:QueuePick>
  <Queue>GsmIn</Queue>
  <ID>121</ID>
</pos:QueuePick>
```

### Reply (for qGsmIn)

```
<pos:QueuePick>
  <Rslt>0</Rslt>
  <Gsm>
    <Cmd>SMS</Cmd>
    <ID>121</ID>
    <Nmr>00420800123456</Nmr>
    <Text>Poseidon: halo halo</Text>
  </Gsm>
</pos:QueuePick>
```

## Get queue status

```
<pos:QueueStatus>
  <Queue>GsmIn</Queue>
</pos:QueueStatus>
```

**Reply:**

```
<pos:QueueStatus>
  <Rslt>0</Rslt>
  <Max>5</Max>
  <Cnt>2</Cnt>
  <Missed>0</Missed>
  <IdSet>
    <ID>120</ID>
    <ID>121</ID>
    <ID>122</ID>
    <ID>123</ID>
  </IdSet>
</pos:QueueStatus>
```

**Get queue record status**

```
<pos:RecordStatus>
  <Queue>GsmOut</Queue>
  <ID>120</ID>
</pos:RecordStatus>
```

**Reply:**

```
<pos:RecordStatus>
  <Rslt>0</Rslt>
  <Retry>5</Retry>
</pos:RecordStatus>
```

**Erase queue record**

```
<pos:RecordDelete>
  <Queue>Rfid</Queue>
  <ID>120</ID>
</pos:RecordDelete>
```

**Reply:**

```
<pos:RecordDelete>
  <Rslt>0</Rslt>
</pos:RecordDelete>
```

**Information on putting into queue (qGsmIn)**

```
<pos:NotificationEvent>
  <Queue>GsmIn</Queue>
  <DeviceName>device name</DeviceName>
  <MAC>00:0A:59:00:B1:66</MAC>
  <Gsm>
    <Cmd>SMS</Cmd>
    <ID>120</ID>
    <Nmr>00420800123456</Nmr>
    <Text>Poseidon: halo halo</Text>
  </Gsm>
</pos:NotificationEvent>
```

**Reply (from a remote server)**

```
<pos:NotificationEvent>
  <Rslt>0</Rslt>
</pos:NotificationEvent>
```

## SNMP – Interface description

---

SNMP (Simple Network Management Protocol) is a protocol designed for exchanging basic system information using short packets sent over UDP/IP.



Individual variables are described in a MIB (Management Information Base) table that pertains to a particular device. The MIB is distributed as a separate .mib file. For Poseidon products, the MIB is available on the supplied CD and at our website.

SNMP is an asynchronous protocol based on the client/server model (SNMP Client / SNMP Agent in this case). This means that a monitoring center (SNMP Client) requests the states of individual variables, and the SNMP Agent implemented in the device responds.

SNMP support is implemented in many languages designed for creating dynamic websites (PHP, ASP, Java, Perl, Python, and so on). Thanks to available modules, read and write access to data provided by a device over SNMP is relatively quick to implement.

In the standard communication mode, a “request and response” communication model is used. Variables are defined by a hierarchy (sequence) of numbers that is described in the MIB table, where the meanings, names and formats of individual variables are given. If you know the hierarchy (numeric line – for example „1.3.6.1.4.1.21796.3.3.1.1.2.3“ – Binary 3 input state) for the specific value, MIB table is not needed.

For clarity, the following terms need to be understood:

- **MIB table** – The .mib file is a text file that describes individual variables supported by the device. It contains the addresses, names, descriptions and numeric formats of the variables.
- **OID** is a variable identifier in the table. It is the “long” number that defines the position of the variable in the tree of variables.

Some programs for working with SNMP do not support MIB files. In this case, you need to enter the OID strings manually. These strings can be found in the MIB table. However, to save you some time in first experiments with SNMP, a list of several variables with their OIDs follows:

## Downloading the MIB file from the main product web page

The screenshot shows the web interface of the Jan Office - P2 3268 device. The browser address bar shows the URL [192.168.1.106/general.xml](http://192.168.1.106/general.xml). The interface has a sidebar with a 'General' menu. The main content area displays various configuration sections: 'Dry Contact Inputs', 'Relay Outputs', 'Sensors', 'Download', and 'Terminal Config (TCP Setup)'. In the 'Download' section, there are links for 'SNMP MIB', 'SNMP Object Identifier', and 'XML Schema Definiton'. The 'SNMP MIB' link is circled in red, and a right-click context menu is open over it, showing options like 'Open', 'Open in New Tab', 'Open in New Window', 'Save Target As...', 'Print Target', 'Cut', and 'Copy'. The 'Save Target As...' option is highlighted. At the bottom of the interface, there is a footer with the text 'For more information try <http://www.hw-group.com/>'.

**Jan Office - P2 3268** GENERAL

**Dry Contact Inputs**

Name	ID	Current Value	Alarm Alert
Test DI1	1	0(Off)	Disabled
DI2	2	0(Off)	Disabled
Tamper DI3	3	1(On)	Disabled
DI4	4	0(Off)	Disabled
Comm Monitor 1	123	0(Off)	Active if on

**Relay Outputs**

Name	ID	Current Value	Mode
Relay 1	151	0(Off)	Manual
Relay 2	152	0(Off)	On if value equal to Trigger

**Sensors**

Name	ID	Current Value	Safe Range	Hysteresis	Alarm Alert
Test	26684	24.8 °C	15.0 .. 45.0	0.0	Disabled
Outdoor	44985	13.8 °C	-10.0 .. 45.0	0.0	Disabled

**Download**

SNMP MIB: [MIB](#)  
SNMP Object Identifier: [OID](#)  
XML Schema Definiton: [XSD](#)

**Terminal Config (TCP Setup)**

Connect with telnet to: [192.168.1.106 Port 99](http://192.168.1.106:99)

Reload values every  [s]   
Values reloaded 3

For more information try <http://www.hw-group.com/>

The MIB file is located in the device itself. Use the right mouse button in your browser to download and save it.

## OID descriptions of SNMP variables

The following table lists the variables, their OID addresses and values. The values apply to the specified Poseidon configuration shown in the HTML page screen shot on the right.

- Firmware: **1.9.6**
- Dry contact states: 1=ON, 2=Off, 3=Off, no alarms
- Connected sensors:
  - **1x HTemp-485** (1x temperature [ID 80], 1x humidity [ID 112])
  - **1x 1Wire bus** (temperature [ID 50176, 47872])

Variable	OID	Value	Description
<b>sysDescr</b>	<b>.1.3.6.1.2.1.1.1</b> .iso.org.dod.internet.mgmt.mib-2.system.sysDescr	Poseidon SNMP Supervisor v1.9.6	Textual description of the entity
<b>sysUpTime</b>	<b>.1.3.6.1.2.1.1.3.0</b> .iso.org.dod.internet.mgmt.mib-2.system.sysUpTime	0:17:12:32.18	Time (in tens of milliseconds) since the last init of the network management portion of the system
<b>Input 1 state</b>	<b>.1.3.6.1.4.1.21796.3.3.1.1.2.1</b> )inpTable.inpEntry.inpState	On (2)	Binary input states (integer)
<b>Input 3 state</b>	<b>.1.3.6.1.4.1.21796.3.3.1.1.2.3</b> )inpTable.inpEntry.inpState	Off (1)	
<b>Input 2 Name</b>	<b>.1.3.6.1.4.1.21796.3.3.1.1.3.2</b> )inpTable.inpEntry.inpName	Binary 2	Binary input name (string)
<b>Input 3 Alarm</b>	<b>.1.3.6.1.4.1.21796.3.3.1.1.4.3</b> )inpTable.inpEntry.inpSetupAlarm	No (0)	Alarm for the binary input, generated by the device under defined conditions
<b>RTS Output (Port 2)</b>	<b>.1.3.6.1.4.1.21796.3.3.2.1.2.2</b> )outTable.outEntry.outState	Off (1)	Binary input state (integer)
<b>Sensor 1 Name</b>	<b>.1.3.6.1.4.1.21796.3.3.3.1.2.1</b> )tempTable.tempEntry.sensorName	HTemp temp	Sensor name (string)
<b>Sensor 1 State</b>	<b>.1.3.6.1.4.1.21796.3.3.3.1.4.1</b> )tempTable.tempEntry.sensorState	normal (1)	Binary input states (integer)
<b>Sensor 2 State</b>	<b>.1.3.6.1.4.1.21796.3.3.3.1.4.2</b> )tempTable.tempEntry.sensorState	alarm (2)	
<b>Sensor 1 Value</b>	<b>.1.3.6.1.4.1.21796.3.3.3.1.6.1</b> )tempTable.tempEntry.tempValue	223	Integer (decimal * 10) representation of the temperature (integer)
<b>Sensor 2 Value</b>	<b>.1.3.6.1.4.1.21796.3.3.3.1.6.2</b> )tempTable.tempEntry.tempValue	223	
<b>Sensor 4 Value</b>	<b>.1.3.6.1.4.1.21796.3.3.3.1.6.4</b> )tempTable.tempEntry.tempValue	223	
<b>Sensor 2 Name</b>	<b>.1.3.6.1.4.1.21796.3.3.99.1.2.1.2.2</b> )setup.tempSetup.tempSetupTable.tempSetupEntry.tempSensorName	HTemp humid	Sensor name (string)
<b>Sensor 1 ID</b>	<b>.1.3.6.1.4.1.21796.3.3.99.1.2.1.4.1</b> )setup.tempSetup.tempSetupTable.tempSetupEntry.tempSensorAddr	80	Unique sensor ID (integer)
*) Text version of the OID begins with ".iso.org.dod.internet.private.enterprises.hwgroup.charonII.poseidon" which corresponds to the numerical OID ".1.3.6.1.4.1.21796.3.3".			



## Shortened OID list

### Poseidon family SNMP OID description

#### Poseidon Device Values:

.1.3.6.1.2.1.1.1.0	Device description (string)
.1.3.6.1.2.1.1.5.0	Device name (string)

#### Dry Contact Inputs

.1.3.6.1.4.1.21796.3.3.1.1.2.1	Contact Input 1 state (integer, 1=Off, 2=On)
.1.3.6.1.4.1.21796.3.3.1.1.2.3	Contact Input 3 state (integer, 1=Off, 2=On)
.1.3.6.1.4.1.21796.3.3.1.1.3.1	Dry Contact Input 1 name (R/W string)
.1.3.6.1.4.1.21796.3.3.1.1.4.1	Dry Contact Input 1 Alarm state (integer)

#### Sensor

.1.3.6.1.4.1.21796.3.3.3.1.6.1	Sensor 1 current value *10 (integer)
.1.3.6.1.4.1.21796.3.3.3.1.6.2	Sensor 2 current value *10 (integer)
.1.3.6.1.4.1.21796.3.3.3.1.6.10	Sensor 10 current value *10 (integer)
.1.3.6.1.4.1.21796.3.3.3.1.2.1	Sensor 1 name (R/W string)
.1.3.6.1.4.1.21796.3.3.3.1.2.2	Sensor 2 name (R/W string)
.1.3.6.1.4.1.21796.3.3.3.1.4.1	Sensor 1 state (integer, 0=Invalid, 1=Normal, 2=AlarmState, 3=Alarm)
.1.3.6.1.4.1.21796.3.3.3.1.5.1	Sensor 1 current value, units included (string)
.1.3.6.1.4.1.21796.3.3.3.1.8.1	Sensor 1 unique ID (integer)
.1.3.6.1.4.1.21796.3.3.3.1.9.1	Sensor 1 units (integer, 0=°C, 1=°F, 2=°K, 3=%, 4=V, 5=mA, 6=unknown, 7=pulse, 8=switch)

#### Outputs

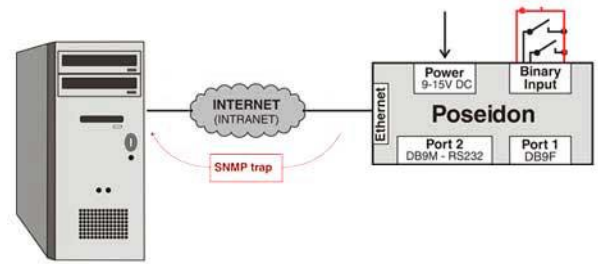
.1.3.6.1.4.1.21796.3.3.2.1.2.1	Output 1 state (R/W integer, 1=Off, 2=On)
.1.3.6.1.4.1.21796.3.3.2.1.2.2	Output 2 state (R/W integer, 1=Off, 2=On)
.1.3.6.1.4.1.21796.3.3.2.1.3.1	Output 1 name (R/W string)

For more details, analyze the MIB file or see the detailed device manual.

## SNMP Trap – Interface description

Whenever a value gets outside of the safe range for a sensor, the sensor enters the ALARM state. To notify about the alarm state, a SNMP trap is send to the specified IP address.

SNMP traps consist of **two UDP packets** sent by the SNMP Agent to the monitoring center (SNMP Client). The packet format is detailed in the MIB table. The first packet contains information about raising the ALARM, the second packet contains additional info about the sensor causing the alarm. When the alarm state ends (e.g. the temperature returns to the safe range), two more UDP packets are sent to inform about the termination of the alarm state.



This method was developed for faster notification of alarms because – in the normal request / response SNMP mode – the polling period may range from hundreds of milliseconds to minutes or even days.

For dry contacts, alarm can be sent upon opening/closing, or turned off completely.

## SNMP traps sent by the Poseidon

The MIB table contains a list as well as detailed descriptions of SNMP traps. An overview follows.

- **Cold Start + Link Up Trap**

A pair of SNMP traps sent after the device starts up. If a sensor is in alarm upon startup, two more traps immediately follow.

- **Alarm raised on a dry contact**

A pair of SNMP traps sent when an alarm is activated for a dry contact. The first trap contains alarm activation identification for maintaining the “alarm table”. The second trap contains, for instance, the name of the input in alarm.

- **Alarm terminated on a dry contact**

A pair of SNMP traps sent when an alarm ends for a dry contact. This pair is always preceded by the traps related to the alarm activation. The first trap contains alarm activation identification for maintaining the “alarm table”. The second trap contains, for instance, the name of the input in alarm.

- **Alarm activated due to sensor value**

A pair of SNMP traps sent when a sensor alarm is activated (temperature, humidity and others). Alarm is activated if the reading gets out of the defined range  $\pm$  hysteresis. The first trap contains alarm activation identification for maintaining the “alarm table”. The second trap contains the assigned sensor name and the value causing the alarm.

- **Alarm activated due to sensor value**

A pair of SNMP traps sent when a sensor alarm is activated (temperature, humidity and others). Alarm ends when the reading returns back to the safe range  $\pm$  hysteresis. The first trap contains alarm activation identification for maintaining the “alarm table”. The second trap contains the assigned sensor name and the value causing the alarm.

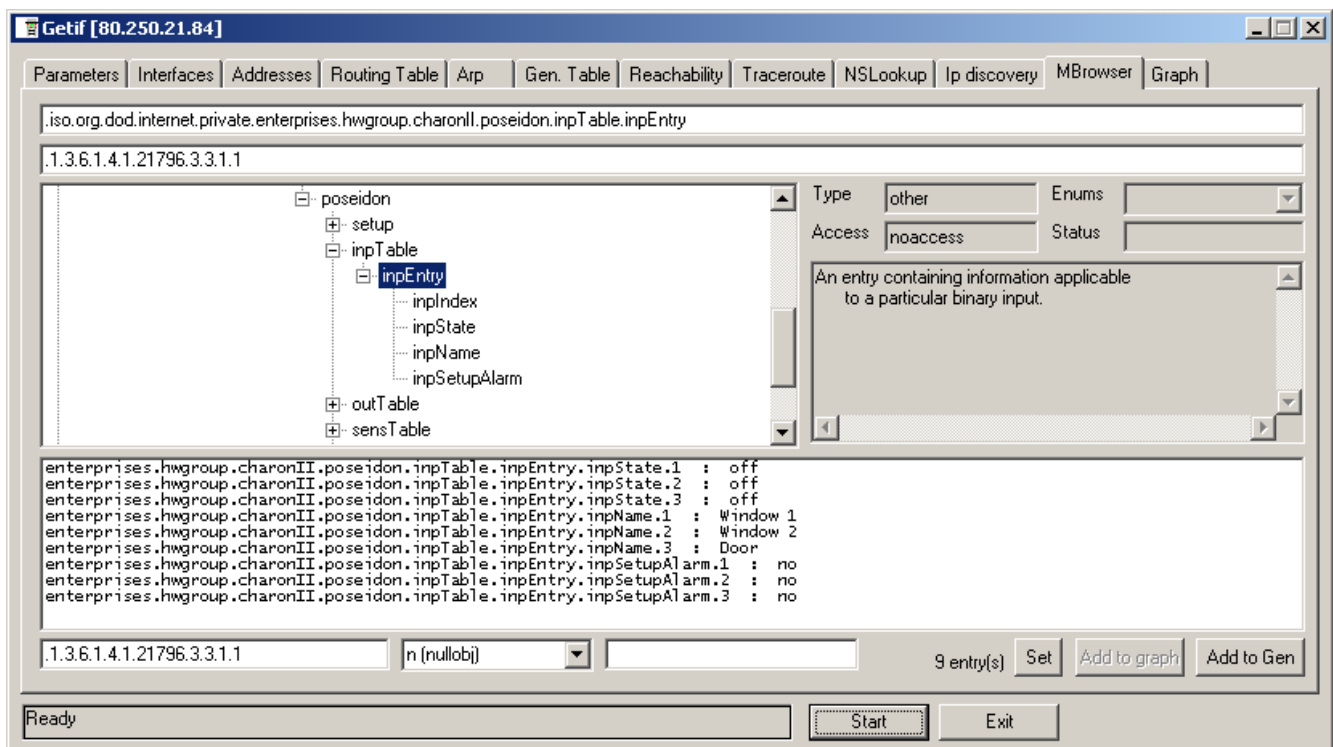
## Recommended SW for SNMP experiments

### GetIf

GetIf is a utility for working with SNMP variables. It allows browsing the variables in the SNMP tree, reading the values, setting the values, and displaying details according to the MIB.

Before using the utilities, we recommend to watch the demonstration Flash animation that is available at our website.

- **License:** Freeware
- **Supported OS:** Windows 2000, XP, 2003 Server
- **Communication protocol:** SNMP, contains MIB Manager
- **Alarm response:** No, SNMP trap reception not supported



## iReasoning MIB Browser + Trap Receiver

Two freeware utilities for working with SNMP variables. They allow browsing the variables in the SNMP tree, reading the values, setting the values, and displaying details according to the MIB that can be loaded to the utility.

Before using the utilities, we recommend to watch the demonstration Flash animation that is available at our website.

The screenshot shows the iReasoning MIB Browser application. The top menu bar includes File, Edit, Operations, Tools, and Help. The Address field is set to 80.250.21.85, and the OID is .1.3.6.1.4.1.21796.3.4.99.1.2.1.8.5. The Operations dropdown is set to Walk. The MIB tree on the left shows the hierarchy: MIB Tree > RFC1213-MIB.iso.org.dod.internet.mgmt.mib- > POSEIDON-MIB.iso.org.dod.internet.private. > setup > inpTable > inpEntry > outTable > sensTable > sensEntry. The details pane for 'sensEntry' shows its OID as .1.3.6.1.4.1.21796.3.3.3.1, Syntax as SensEntry, Access as not-accessible, Status as current, and a description: 'An entry containing information applicable to a particular sensor.' The Result Table displays the following data:

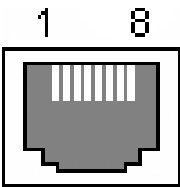
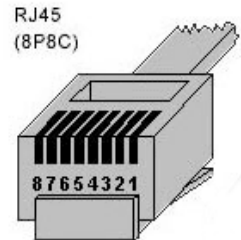
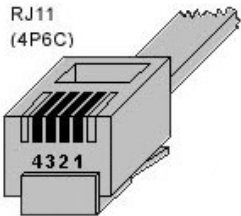
Name/OID	Value
sensName.1	2. floor A
sensName.2	2. floor B
sensName.3	2. floor C
sensName.4	2. floor D
sensName.5	2. floor humid
sensState.1	normal
sensState.2	normal
sensState.3	normal
sensState.4	normal
sensState.5	normal
sensString.1	26.3 C
sensString.2	26.8 C
sensString.3	26.7 C
sensString.4	27.0 C
sensString.5	45.8 %
sensValue.1	263
sensValue.2	268
sensValue.3	267
sensValue.4	270
sensValue.5	458
sensValueRaw.1	422
sensValueRaw.2	430

The status bar at the bottom shows the path: .iso.org.dod.internet.private.enterprises.hwgroup.charonII.damocles.setup.sensSetup.sensSetupTable.sensSetupEntry.sensHysteresis.5, the time 2:08:48 PM, and 4M of 7M.

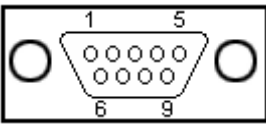
# Connectors and connections



Power connector



## DB9M: RS-232











1	-	-	Not used
2	<b>RxD</b>	<--	Receive Data
3	<b>TxD</b>	-->	Transmit Data
4	<b>DTR</b>	-->	Data Terminal Ready
5	<b>GND</b>	---	System Ground
6	<b>DSR</b>	<--	Data Set Ready
7	<b>RTS</b>	-->	Request to Send
8	<b>CTS</b>	<--	Clear to Send
9	-	-	Not used

## RJ11: 1-Wire

	<b>+5V</b>	Power
1	-	Not used
2	<b>Data</b>	Transmit Data
3	<b>GND</b>	Ground
4	<b>+5V</b>	Power
	-	Not used

## RJ45: RS-485

1		Not used
2		Not used
3		485 B back
4		RS-485
5		
6		485 A back
7		Ground
8		Power