Ares®

Ares 10/12 LTE – User manual

www.lucom.de

05-03-21

Ares LTE family

Ares LTE monitors the readings of connected sensors. When a value reaches the alarm threshold, the device sends an e-mail or a text message (SMS), or dials specified numbers.

Use the SensDesk portal to configure the Ares LTE, send alarms or display graphs.
Ares LTE products are ready for remote mass deployment using FOTA (Firmware Over The Air).

Safety information

The device complies with regulations and industrial standards in force in the Czech Republic and the European Union. The device has been tested and is supplied in working order. To keep the device in this condition, it is necessary to adhere to the following safety and maintenance instructions.

Never remove the device cover if the relay terminals are connected to the electrical network!

Using the device in a manner other than prescribed by the manufacturer may cause its safeguards to fail!

The power supply outlet or disconnection point must be freely accessible.

The device must not be used in particular under any of the following conditions:

- The device is noticeably damaged
- The device does not function properly
- Unfastened parts can move inside the device
- The device has been exposed to moisture or rain
- The device has been serviced by unauthorized personnel
- The power adapter or power supply cable are noticeably damaged
- If the device is used in a manner other than designed for, the protection provided by the device may fail.
- The local electrical system must include a power switch or a circuit breaker and overcurrent protection.

The manufacturer warrants the device only if it is powered by the supplied power adapter or an approved power supply.

If you have any problems with installing or operating the device, please contact technical support:

HW group s. r. o.
http://www.hw-group.com
E-mail: support@HWg.cz
Phone: +420 222 511 918
Formanská 296
Prague, 149 00
Czech Republic

When contacting technical support, please keep at hand the exact type of your device (at the type plate) and, if possible, the firmware version (see later in this manual).

Table of contents

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Basic features

- Dual band GSM/GPRS modem (900/1800 MHz) with 3G (WCDMA) support and LTE
- Number of 1-Wire sensors:
  - Ares 10 LTE – 3
  - Ares 12 LTE – 14
- External antenna
- Support for PIN-protected SIM
- Alarm alerts
  - SMS (up to 5 phone numbers)
  - Ringing a specified number (up to 5 phone numbers)
  - E-mail (up to 5 addresses) with selectable priority
- User templates for SMS and e-mail alarms (different for each sensor)
- Periodic reminders about active alarms
- Per-sensor hysteresis settings
- Logs periodically e-mailed to up to 5 addresses (independent from alarm addresses) with selectable priority
- Configurable global interval for storing measured values (15 minutes by default)
- Support for portal-based solutions with the HWg-PUSH protocol
  - Periodic data transfer
  - Data transfer when values differ by more than the specified tolerance
- Status request
  - SMS from a predefined number
  - SMS from any number containing a password
  - Ringing the device from a predefined number
- Internal memory for measured values: 2 MB – 170,000 records
- Simple configuration with an intuitive Windows utility
- Connects to PC over USB without special drivers (Mass Storage, HID)
- Power failure indication through a virtual input (supports alarms)
- Battery status indication (supports alarms)*
- Option to activate/deactivate GPRS when roaming. SMS alarms and control still 100% functional
- Wall mount, DIN rail mount options
- Firmware upgrade over USB or GPRS (On the Fly – Over the Air)
  - Upgrade can be started with a SMS command
- Logging stops when Ares LTE is connected to USB
- Sensors are automatically detected when the device is turned on
- Alarm information available immediately after powering up

**Applies to Ares12 LTE only.*

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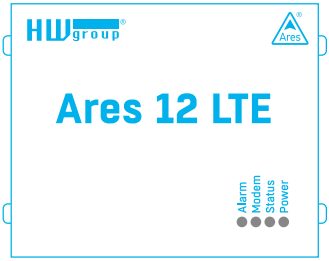
Description of connectors and connections

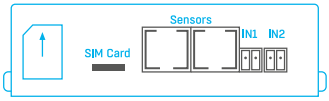
LED indicators

- *Alarm (red)* – indicates alarm status. One or more sensors read outside of the allowed range, or an alarm at one or more inputs (2× Digital Inputs or external power supply indication).
- *Modem (blue)* – informs about GPRS connection.
  - ***Fast blinking*** – GPRS connection is being established.
  - ***On*** – connection established.
  - ***Slow / occassional blinking*** – communication takes place.
- *Status (yellow)*
  - ***Fast blinking*** – GSM connection is being established.
  - ***Blinking 1× / second*** – device works normally.
- *Power (green)* – power is connected. Blinks when the device runs on battery*.



Inputs

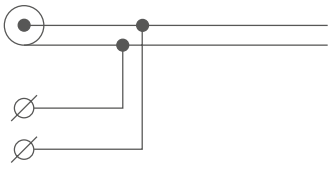
2× Digital Input for connecting a voltage-free (dry) contact. Logic 0 (contact open) when the resistance between terminals is greater than 15 kOhm. Logic 1 (closed contact) when the resistance is less than 2.7 kOhm. Resistances between these values are undefined.



Identical for Ares 10 LTE.

Power

Power supply 9-30 V / 500 mA can be connected to the power terminals or the power barrel connector. The terminals and the connector are interconnected and can NOT be used to connect two different power sources (e.g. adapter and back-up battery*).



Sensors

2× independent port for connecting 1-Wire sensors, with support for 1-Wire UNI. Each port can be connected to a bus, maximum length is 60 m. The total number of supported sensors is a device-wide limitation, the sensors can be connected to one port or distributed among both ports in any way.

Caution: *Depending on the consumption of connected sensors the use of an active hub may be necessary – see chapter 1-Wire UNI Sensors.*

Sim Card

Standard Plug-in SIM.

GSM

SMA connector for an external antenna. The external antenna needs to be QuadBand-capable and equipped with a male SMA connector. External antenna is required for proper operation of the device.

**Applies to Ares12 LTE only.*

Specifications

Connection	
Interface	FDD LTE bands: B1/B3/B5/B7/B8/B20 WCDMA bands: B1/B5/B8 GSM bands: 900/1800 GPRS multi-slot class 12 Class 4 (33 dBm ±2 dB) for GSM900 Class 1 (30 dBm ±2 dB) for DCS1800 Class E2 (27 dBm ±3 dB) for GSM900 8-PSK Class E2 (26 dBm ±3 dB) for DCS1800 8-PSK Class 3 (24 dBm +1/-3 dB) for WCDMA bands Class 3 (23 dBm ±2 dB) for LTE FDD bands
Supported protocols	IP: TCP, UDP, HTTP, SNTP, SMTP, HWg-PUSH

Sensors	
Type	HWg original accessories: 1-Wire & 1-Wire UNI
Connector	RJ11 (1-Wire Bus)
Sensors	Ares 10 LTE– up to 3 sensors Ares 12 LTE – up to 14 sensors
Sensor distance	Up to 60 m

Dry contact inputs	
Port	I1, I2
Type	Digital Input (supports NO/NC Dry contact)
Sensitivity	1 (On) = 0-500 Ω (Right pin on the terminal block can be connected to 12 V GND)
Max. distance	Up to 50 m

Power input	
Port	9–30 V DC
Type	Main device power input (typically 500 mA)
Connector	Jack (barrel, inner 2.1 mm outer 5.5 mm) + Terminal Block
Accumulator	Operation for approx. 24 hours (only Ares 12 LTE)

Physical parameters	
Temperature range	Operating: 5 to +50 °C (+41 to +122 °F) Storage: -25 to +85 °C (-13 to +185 °F)
Dimensions / Weight	76×93×31 mm / 150 g
EMC	CE - EN 55022, EN 55024, EN 61000

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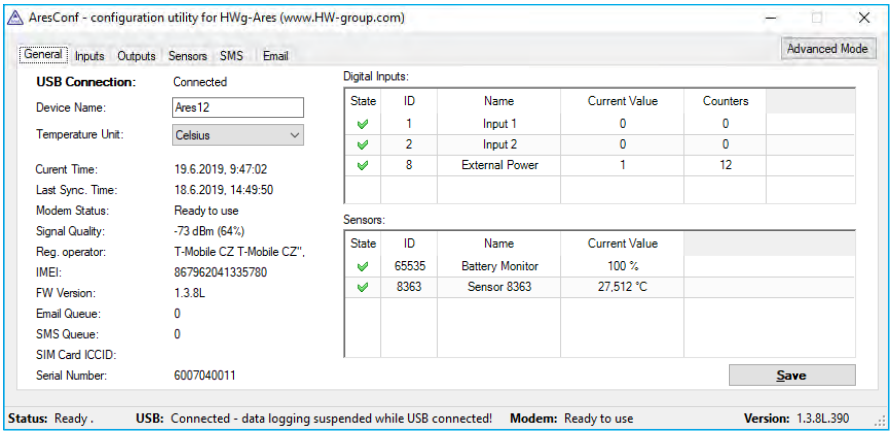
First steps

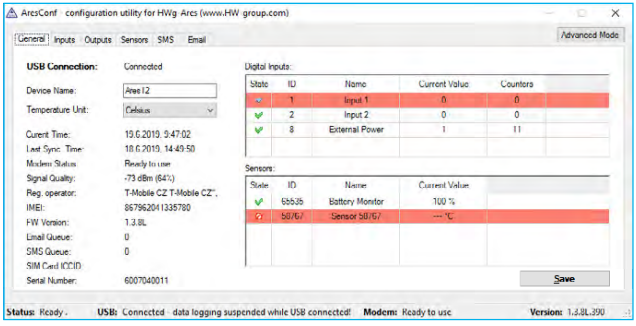
Connect Ares LTE to PC with an USB cable and open the ARES disk that appears. Double-click the AresConf application to start it. The *General* tab appears and shows the device status:

General



This tab gives information about sensors and digital inputs, together with graphical symbols for quick overview.
You can set the *Device Name* and the unit of temperature (°C, °F, K) here. The temperature unit changes about 5 seconds after pressing *Save*.
When starting the device for the first time, pay attention to the mobile network connection and signal strength information. If the signal is too weak, relocate the antenna. If the modem is unable to log in to the GSM network, check the PIN security code settings of the SIM. For details, see *Advanced settings*.

All deviations from normal are indicated graphically:



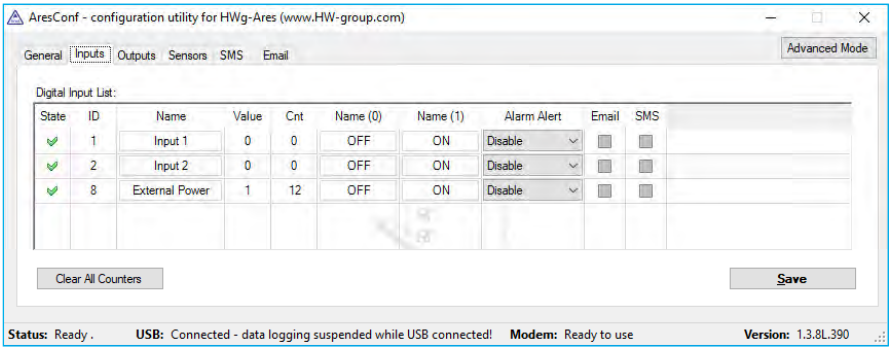
Sensor connected, value within Safe Range (no Alarm)

Sensor disconnected (Alarm)

Sensor (Digital Input) out of range, upper threshold exceeded (Alarm)

Sensor (Digital Input) out of range, lower threshold exceeded (Alarm)

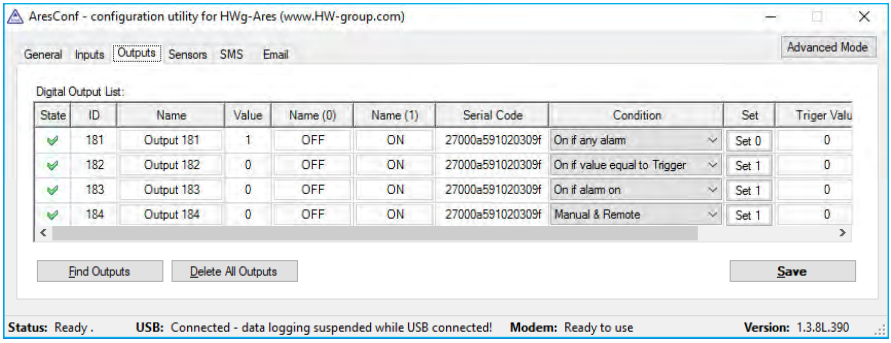
Inputs



Use this tab to configure basic properties of digital inputs:

- *Clear All Counters* – sets all counters to zero value.
- *Save* – saves all changes.

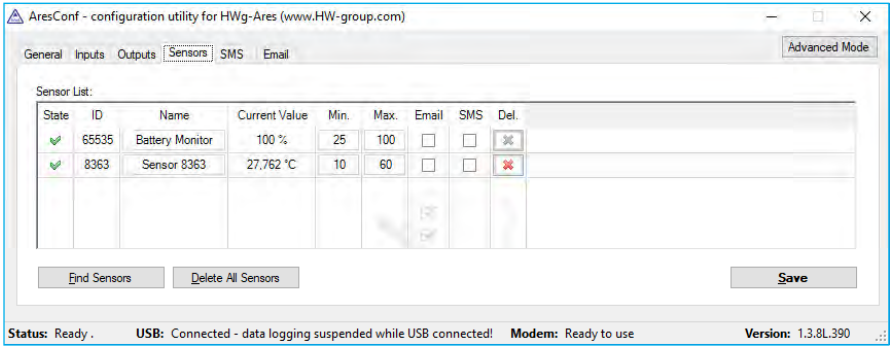
Outputs



It is possible to connect the External Outputs module via the 1-Wire UNI interface to the Ares 12 LTE device.

- *Find Outputs* – detects external outputs module. By default, outputs are detected only when the unit is powered up. Later connected outputs must be detected manually. Detected outputs are automatically added to the list.
- *Delete All Outputs* – deletes all discovered outputs.
- *Save* – saves all changes.

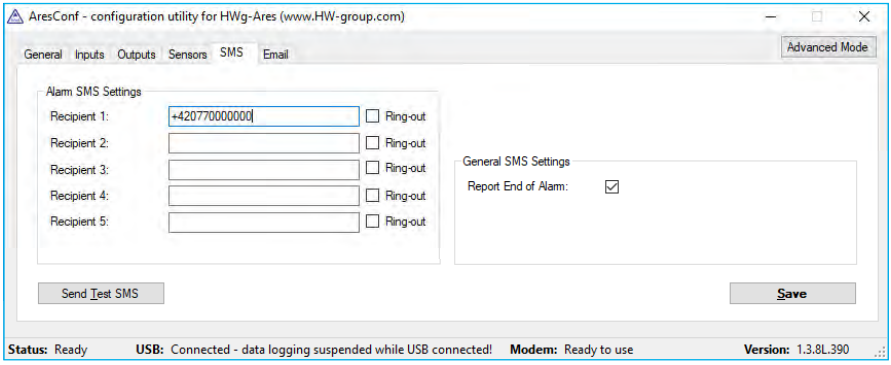
Sensors



Use this tab to configure basic properties of sensors:

- *Del* – removes the sensor from the list (e.g. when the sensor is disconnected). If the sensor remains physically connected, it will be detected again when the Ares LTE unit is restarted. Sensor no. 65535 is a system entry and cannot be deleted.
- *Find Sensors* – detects all connected sensors. By default, sensors are detected only when the unit is powered up. Sensors connected later must be discovered manually. Detected sensors are automatically added to the list.
- *Delete All Sensors* – deletes all discovered sensors. System entry Sensor no. 65535 can't be deleted.
- *Save* – saves all changes.

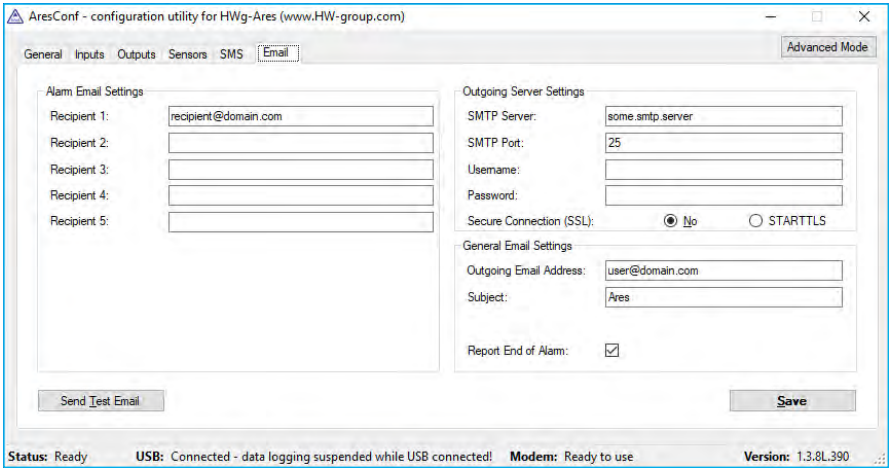
SMS



Use this tab to configure alarm text message (SMS) recipients. Each recipient phone number is also authorized to request information from Ares 12 LTE by dialing the unit's phone number and to send SMS commands without a password (see *Advanced settings*).

- *Recipient 1-5* – phone numbers where to send alarm text messages (SMS).
  - ***Ring-out*** – upon alarm, dial the given number. The phone rings for 15 seconds, or until the call is refused.
- *Report End of Alarm* – users will be also informed when an alarm ends (global setting).
- *Send Test SMS* – sends a test SMS to all configured numbers.
- *Save* – saves all changes.

Email



Use this tab to configure alarm e-mail recipients and parameters.

- *Recipient 1-5* – e-mail addresses of recipients for alarm e-mails.
- *SMTP Server* – IP address or host name of the SMTP server to use for sending e-mail.*
- *SMTP Port* – TCP port where the SMTP server listens.*
- *Username* – username for authentication to the SMTP server.*
- *Password* – password for authentication to the SMTP server.*
- *Secure Connection (SSL): No/STARTTLS* – enables encrypted authentication.*
- *Outgoing Email Address* – sender e-mail address. E-mails will be sent to the recipients from this address.
- *Subject* – subject prefix. Useful for adding a keyword to the e-mail subject in order to simplify mail filtering.
- *Report End of Alarm* – users will be also informed when an alarm ends (global setting).
- *Send Test Email* – sends a test e-mail to all listed recipients.
- *Save* – saves all changes.

**Ask your network administrator or mobile carrier for this information.*

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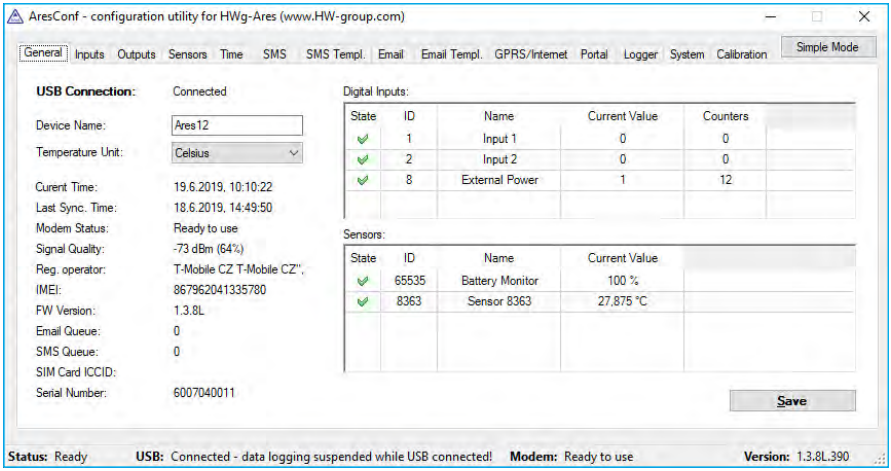
Advanced settings

Advanced settings are enabled by pressing the *Advanced Mode* button.

General



This tab gives information about sensors and digital inputs, together with graphical symbols for quick overview.

- *Device name* – useful for sorting in higher-level systems, or to tell apart several Ares units.
- *Temperature Unit* – units used to work with temperature. The temperature unit changes about 5 seconds after pressing *Save*.
  - ***Celsius*** – °C
  - ***Kelvin*** – K
  - ***Fahrenheit*** – °F
- *Current Time* – informs about the current system time set in the device. The time appears in the log of measured values.
- *Last Sync. Time* – date and time of last time synchronization over the internet. Useful for checking if the time synchronization works.
- *Modem status* – information about the current modem status and readiness:
  - ***SIM unplugged*** – no SIM was found. Insert a SIM, or clean its contact pads.
  - ***Modem initializing...*** – modem is being initialized. The device is establishing communication with the modem and making the modem ready for operation. This information should not appear for more than 10 s. Otherwise, it indicates a modem fault (see *Troubleshooting*).
  - ***Invalid PIN*** – PIN code stored in the Ares LTE unit is incorrect.
  - ***PUK requested*** – PUK code is needed (must be entered in a different kind of device).
  - ***Ready to use*** – modem is registered to the carrier's network and ready for operation.

- ***Dialing...*** – connection to the carrier is being dialed (necessary to establish GPRS connection). This information should not appear for more than 20 s. Otherwise, it indicates a modem fault (see *Troubleshooting*).
- ***Configuring Internet...*** – internet connection is being configured (reading IP parameters).
- ***Connected to Internet*** – the modem is successfully connected to the internet.
- ***Terminating Internet...*** – internet connection is being disconnected.
- ***Terminated*** – connection to the mobile network was terminated. This can appear when the device is being restarted, switched off, or when its battery is low.*
- ***Hanging up...*** – dial-up connection is being hanged up.
- ***„-"*** – unknown state.

- *Signal Quality* – GSM signal quality in dBm and as a percentage. The percentage should be as high as possible. If it is less than 50 %, we strongly suggest to relocate the antenna or use a different mobile carrier.
- *Reg. Operator* – regional GSM carrier. Indicates a successful connection to the GSM network, and the actual carrier when roaming.
- *FW version* – current firmware version.
- *Email Queue* – number of outgoing e-mails waiting in the queue.
- *SMS Queue* – number of outgoing text messages waiting in the queue.

Digital Inputs ID 8 – External Power

System entry that indicates connected/disconnected external power supply. It is used to inform about power failures and battery-powered operation.*

Sensors ID 65535 – Battery monitor

System entry that informs about the battery charge level.*

Note: *In case a backup power supply is needed for Ares 10 LTE we recommend the use of optional accessory „UPS 12V" (12V with 1,3 Ah capacity and power outage indication) or „UPS 12V + 5V" (12V and 5V simultaneous use possible with 1,3 Ah capacity, one 1-Wire UNI output and power outage indication).*

**Applies to Ares 12 LTE only.*

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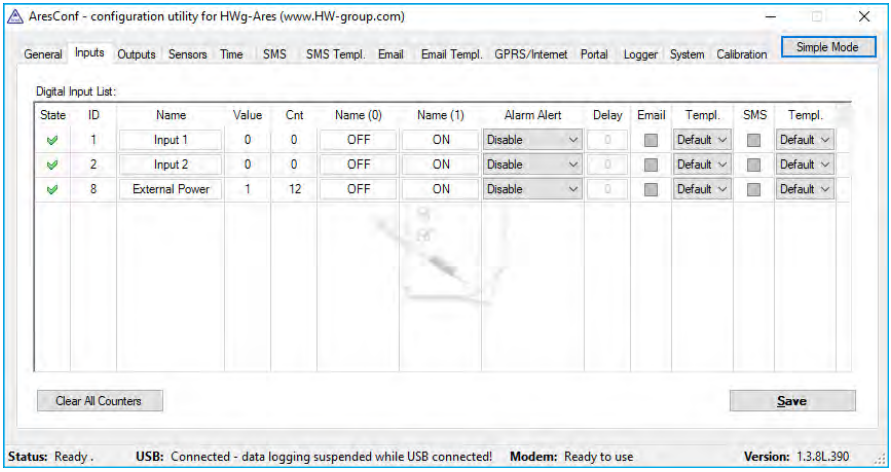
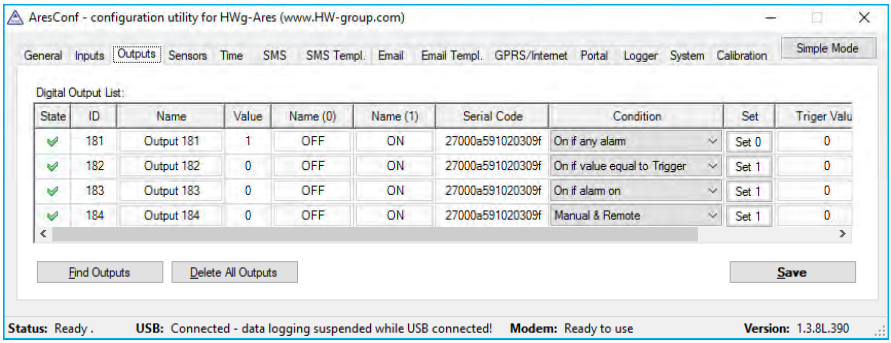
Inputs



Use this tab to configure basic and advanced properties of digital inputs:

- *State* – graphical information about input states (same as on the *General* tab).
- *ID* – unique sensor ID.
- *Name* – sensor name, used for easier overview and for further processing in other systems.
- *Value* – current input state:
  - ***0*** – open (power disconnected).
  - ***1*** – closed (power applied).
- *Cnt* – counter of input (example: Count pulses from energy meter).
- *Name (0)* – name of the state when the input is Off (contact open).
- *Name (1)* – name of the state when the input is On (contact closed).
- *Alarm Alert* – specifies when the input is in alarm:
  - ***Disable*** – alarm is disabled for this input.
  - ***Active if ON (1)*** – alarm when the input is On (closed).
  - ***Active if OFF (0)*** – alarm when the input is Off (open).
- *Delay* – delays the alarm status (in seconds).
- *Email* – sends an e-mail when the input is in alarm.
- *SMS* – sends a text message (SMS) when the input is in alarm.
- *Templ.* – alarm message template. (See the *SMS Templ.* and *Email Templ.* tabs.) The template is set independently for each input.
- *Clear All Counters* – sets all counters to zero.
- *Save* – saves all changes.

Outputs

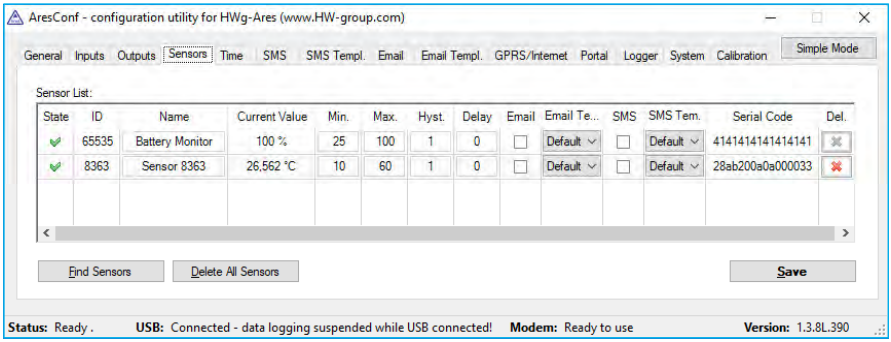


It is possible to connect the External Outputs module via the 1-Wire UNI interface to the Ares 12 LTE device. This module provides 4 NO/NC relay outputs with maximum load up to 1 A / 30 V DC or up to 0,5 A / 50 V AC.

- *State* – graphical information of inputs status - identical as on the *General* tab.
- *ID* – unique ID of the sensor.
- *Name* – input name for its easier identification and for the needs its processing within superior systems.
- *Value* – current input status:
  - ***0*** – disconnected (power Off).
  - ***1*** – connected (power On).
- *Name (0)* – disconnected input status name (Off, open).
- *Name (1)* – connected input status name (On, closed).
- *Serial Code* – unique 1-Wire ID.
- *Condition* – output control method.
  - ***Manual & Remote*** – controlling the input manually by the *SET* switch (Set 1 – switch On, Set 0 – switch Off) or by M2M protocols.
  - ***On if any alarm*** – the output switches On when at least one of the inputs or sensors is in alarm status. Note that this condition reflects the DELAY and HYSTERESIS settings for individual active inputs and sensors.
  - ***On if alarm on*** – the output switches On when there is alarm on a defined input or sensor.
  - ***On if value equal to Trigger*** – the output switches On when the measured value matches the *Trigger Value* setting.
  - ***On if value higher than Trigger*** – the output switches On when the *Current Value* exceeds the *Trigger Value* setting.
- *Trigger Value* – the trigger value of a condition (for example: the output switches to On when a current value exceeds the *Trigger Value*).
- *Dependent On* – selection of the input or sensor to which the condition is applied.
- *Find Outputs* – detects external outputs module. By default, outputs are detected only when the unit is powered up. Later connected outputs must be detected manually. Detected outputs are automatically added to the list.

- *Delete All Outputs* – deletes all discovered outputs.
- *Save* – saves all changes.

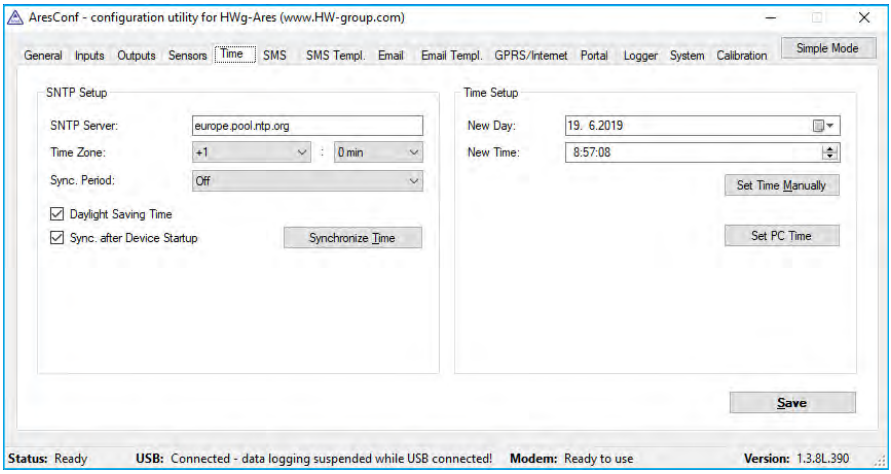
Sensors



Use this tab to configure basic and advanced properties of sensors:

- *State* – graphical information about sensor states (same as on the *General* tab).
- *ID* – unique sensor ID.
- *Name* – sensor name, used for easier overview and for further processing in other systems.
- *Current Value* – current sensor value.
- *Min.* – lower limit of the Safe Range. If the value is less than MIN, alarm is automatically set.
- *Max.* – upper limit of the Safe Range. If the value is more than MAX, alarm is automatically set.
- *Hyst.* – hysteresis for the given sensor.
- *Delay* – delays the alarm status in case the Safe Range values have been exceeded.
- *Email* – sends an e-mail when the sensor is in alarm.
- *Email Templ.* – alarm message template. (See the *Email Templ.* tabs.).
- *SMS* – sends a text message (SMS) when the sensor is in alarm.
- *SMS Templ.* – alarm message template. (See the *SMS Templ.* tabs.).
- *Serial Code* – unique 1-Wire ID.
- *Del.* – removes the sensor from the list (e.g. when the sensor is disconnected). If the sensor remains physically connected, it will be detected again when the Ares LTE unit is restarted. Sensor no. 65535 is a system entry and cannot be deleted.
- *Find Sensors* – detects all connected sensors. By default, sensors are detected only when the unit is powered up. Later connected sensors must be detected manually. Detected sensors are automatically added to the list.
- *Delete All Sensors* – deletes all discovered sensors. Sensor no. 65535 is a system entry and cannot be deleted.
- *Save* – saves all changes.

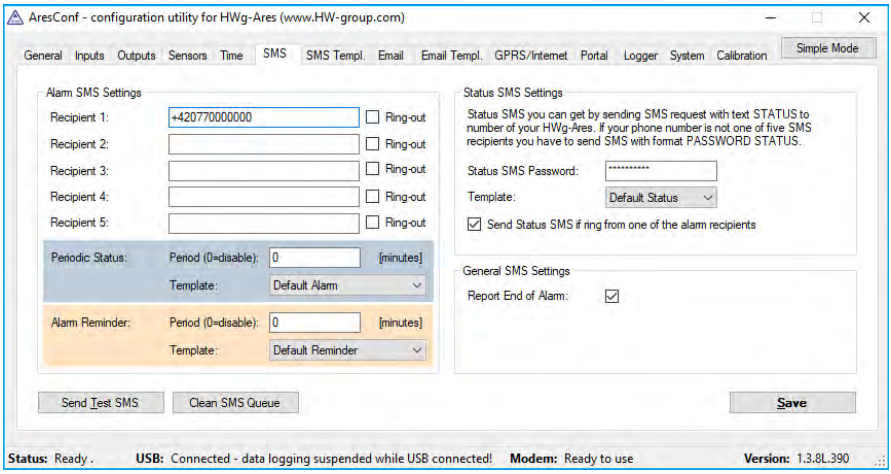
Time



Use this tab to configure the current system time. The time can be set either manually in *Time Setup*, or automatically over the internet.

- *SNTP Server* – URL or IP address of the time server to use.
  - List of stratum one time servers:
    https://support.ntp.org/bin/view/Servers/StratumOneTimeServers
  - List of stratum two time servers:
    https://support.ntp.org/bin/view/Servers/StratumTwoTimeServers
  - List of NIST time servers:
    http://tf.nist.gov/tf-cgi/servers.cgi
  - List of NTP pool servers:
    https://support.ntp.org/bin/view/Servers/NTPPoolServers and *http://www.pool.ntp.org*
- *Time Zone* – time zone where Ares LTE is used.
- *Sync. Period* – indicates how often to synchronize time over the internet (1h/24h).
- *Daylight Saving Time* – activates automatic change to/from DST.
- *Sync. after Device Startup* – synchronizes time over the internet whenever the device is powered on.
- *Synchronize Time* – immediately synchronizes time. Only works when the GPRS connection is functional.
- *New Day* – shows the current date and lets the user change it manually.
- *New Time* – shows the current system time and lets the user change it manually.
- *Set Time Manually* – stores the changed date and time values to memory.
- *Save* – saves all changes.

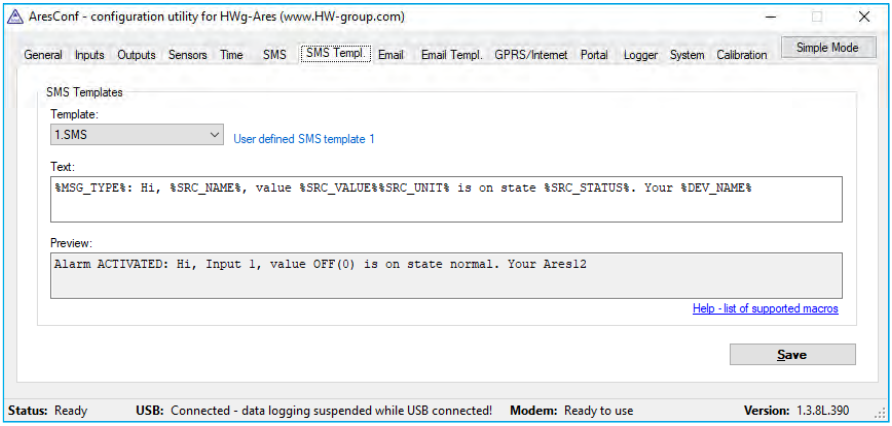
SMS



Use this tab to configure alarm text message (SMS) recipients. Each recipient phone number is also authorized to request information from Ares LTE by dialing the unit's phone number and to send SMS commands without a password.

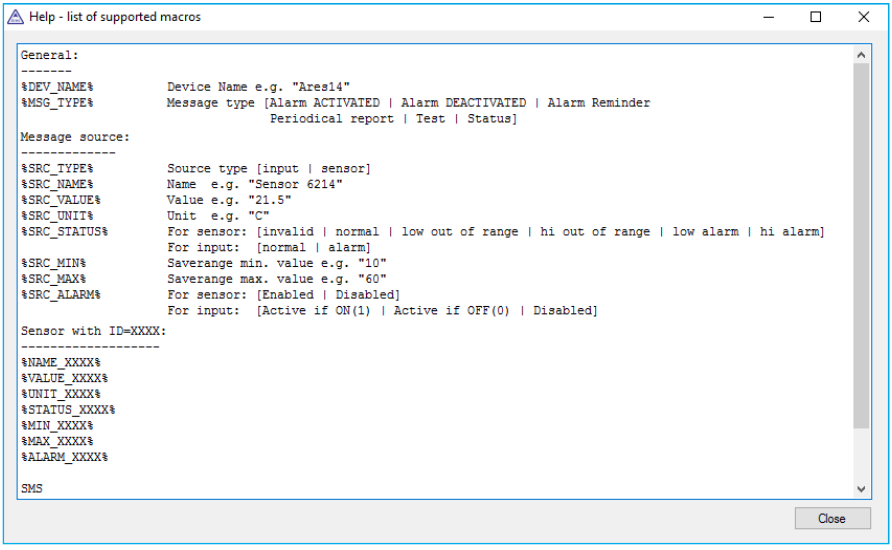
- *Recipient 1-5* – phone numbers where to send alarm text messages (SMS).
  - ***Ring-out*** – upon alarm, dial the given number. The phone rings for 15 seconds (rings three times), or until the call is refused.
- *Periodic Status* – periodical sending statuses of sensors.
  - ***Period*** – period in minutes.
  - ***Template*** – template to use for Periodic Status.
- *Alarm reminder* – sends reminders about active alarms.
  - ***Period*** – period of alarm reminders in minutes.
  - ***Template*** – template to use for the reminder message.
- *Status SMS Settings* – Ares LTE can send a text message with the current sensor states as a reply to an incoming "STATUS" message. If the phone number where the status request originated is not listed among the recipients, a password needs to be specified as well.
  - ***Status SMS Password*** – password required to send the status message to a number not listed among alarm recipients.
  - ***Template*** – template to use for the status message.
  - ***Send Status SMS if ring from one of the Alarm recipients*** – status message is sent whenever any of the alarm recipients calls the device.
- *Report End of Alarm* – users will be also informed when an alarm ends (global setting).
- *Send Test SMS* – sends a test SMS to all configured numbers.
- *Clean SMS Queue* – clears all unsent text messages from the queue.
- *Save* – saves all changes.

SMS template



Use this tab to define the formats of individual messages, e.g. to distinguish temperature alarm messages from humidity alarm messages or to define the contents of status and reminder messages.

- *Template* – selects the template to edit.
- *Text* – message contents, with macros as variables.
- *Preview* – displays a dialog with a preview of the message.
- *Help – list of supported macros* – list of macros that can be used in the message.
- *Save* – saves all changes.



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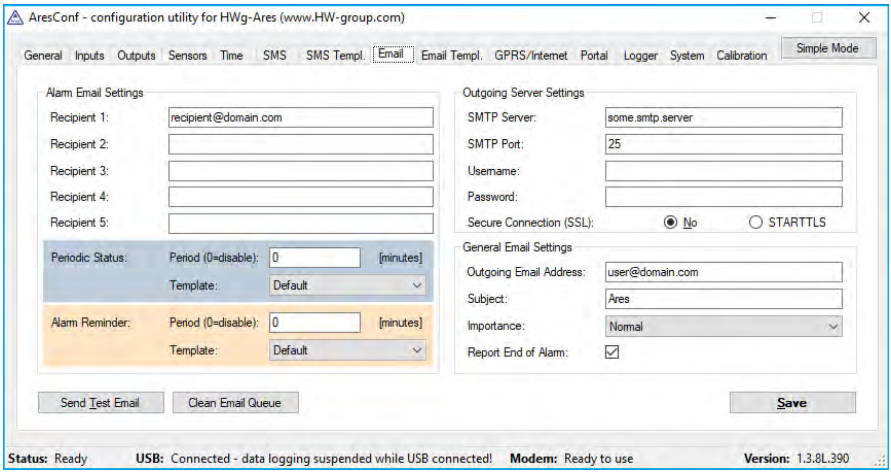
Email

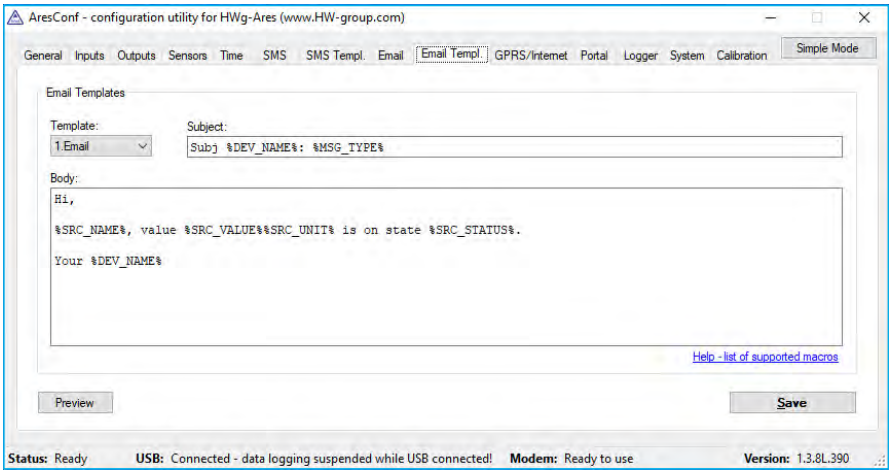


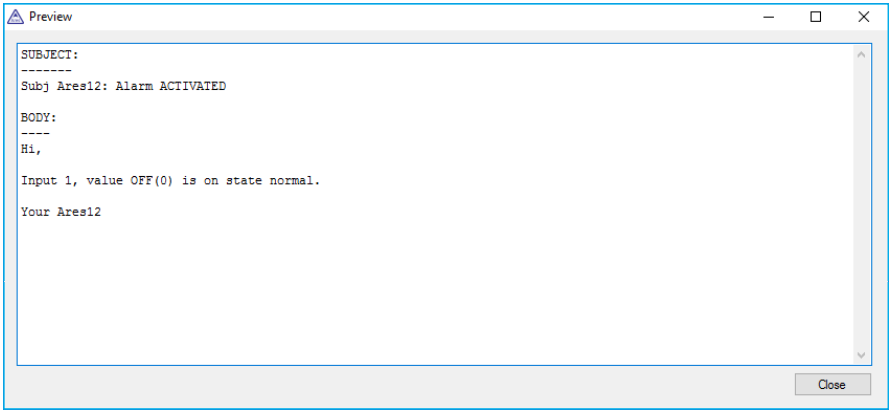
Use this tab to configure alarm e-mail recipients and parameters.

- *Recipient 1-5* – addresses of recipients for alarm e-mails.
- *Periodic Status* – periodical sending statuses of sensors.
  - ***Period*** – period in minutes.
  - ***Template*** – template to use for Periodic Status.
- *Alarm Reminder* – sends reminders about active alarms.
  - ***Period*** – period of alarm reminders in minutes.
  - ***Template*** – template to use for the reminder message.
- *SMTP Server* – IP address or host name of the SMTP server to use for sending e-mail.*
- *SMTP Port* – TCP port where the SMTP server listens.*
- *Username* – username for authentication to the SMTP server.*
- *Password* – password for authentication to the SMTP server.*
- *Secure Connection (SSL): No/STARTTLS* – enables encrypted authentication.*
- *Outgoing Email Address* – sender e-mail address. E-mails will be sent to the recipients from this address.
- *Subject* – subject prefix. Useful for adding a keyword to the e-mail subject in order to simplify mail filtering.
- *Importance* – importance of the e-mail message. Useful for mail filtering in e-mail clients.
- *Report End of Alarm* – users will be also informed when an alarm ends (global setting).
- *Send Test Email* – sends a test e-mail to all listed recipients.
- *Clean Email Queue* – clears all unsent e-mails from the queue.
- *Save* – saves all changes.

**Ask your network administrator or mobile carrier for this information.*

Email Template

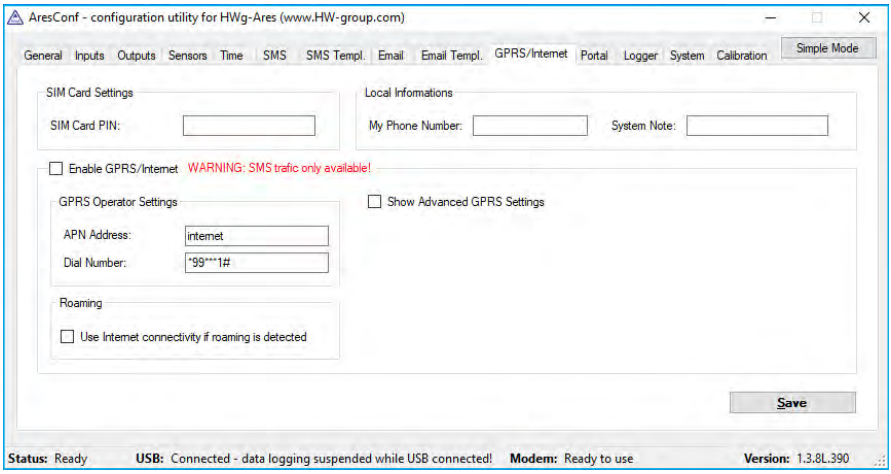




Use this tab to define the format of individual messages, e.g. to distinguish temperature alarm messages from humidity alarm messages or to define the contents of status and reminder messages.

- *Template* – selects the template to edit.
- *Subject* – subject of the e-mail. Macros can be used.
- *Body* – message contents, with macros as variables.
- *Help – list of supported macros* – list of macros that can be used in the message. See the *SMS Template* tab.
- *Preview* – displays a dialog with a preview of the message. See the *SMS Template* tab.
- *Save* – saves all changes.

GPRS/Internet

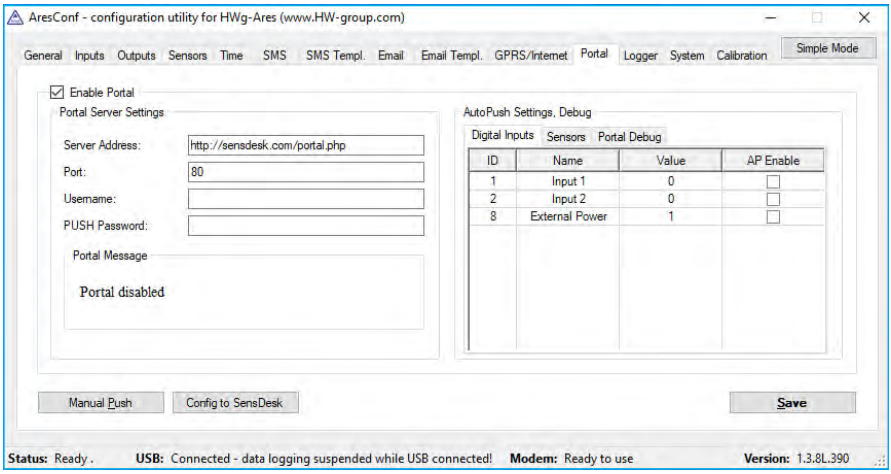


Use this tab to configure the GSM and internet connection details.

- *SIM Card PIN* – specifies the security PIN code for the SIM. The SIM can remain protected with the PIN.
- *Local Informations* – section to store information about the unit, such as its phone number, or a comment. This information does not influence the operation of the device; however, it is sent to a master system and can help to identify the device in larger installations.
  - *My Phone Number* – intended for the phone number of the Ares LTE unit. The phone number needs to be entered manually because this piece of information is generally not provided by neither the SIM nor the network.
  - *System Note* – for general use; it may e.g. identify the physical location of the Ares LTE unit or the department responsible for managing it.
- *Enable GPRS/Internet* – enables internet-based services, such as sending e-mail, portal services and time synchronization. In case the services have been switched off a warning is displayed informing about limiting the communication means to SMS only.
- *GPRS Operator Settings* – settings for accessing the GPRS network of the mobile carrier:
  - ***APN Address*** – Access Point Name identifier. The default is "internet".*
  - ***Dial Number*** – phone number for accessing the internet. The default is "*99***1#".*
- *Roaming* – enables internet connection outside of the home carrier network, e.g. when traveling abroad.
- *Show Advanced GPRS Settings* – displays advanced settings that are accessible directly using AT commands (for experts only).
- *Username* – user name for the connection.*
- *Password* – password for the connection.*
- *Dialup String* – AT string.*
- *Save* – saves all changes.

**Will be provided by the mobile carrier if needed.*

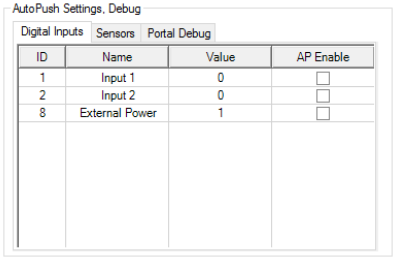
Portal



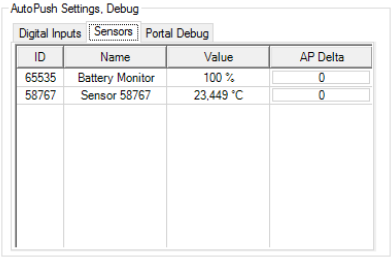
Use this tab to configure the HWg-PUSH protocol.

- *Enable Portal* – enables transmission of data to a remote portal (HWg-PDMS etc.).
- *Server Address* – HTTP address of the portal where the data should be sent.
- *Port* – TCP port of the remote portal (default 80).
- *Username* – username for authentication to the portal.
- *PUSH Password* – password for authentication to the portal.
- *Portal Message* – messages from remote portal.
- *Manual Push* – manual transmission for test purposes.
- *Config to SensDesk* – instantly uploads the device configuration to the SensDesk portal.
- *Save* – saves all changes.

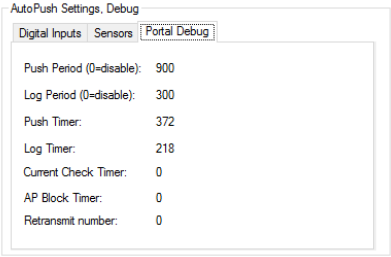
AutoPush Settings, Debug



Digital Inputs – informations of digital inputs (AP Enable = allowed to sending to the portal).



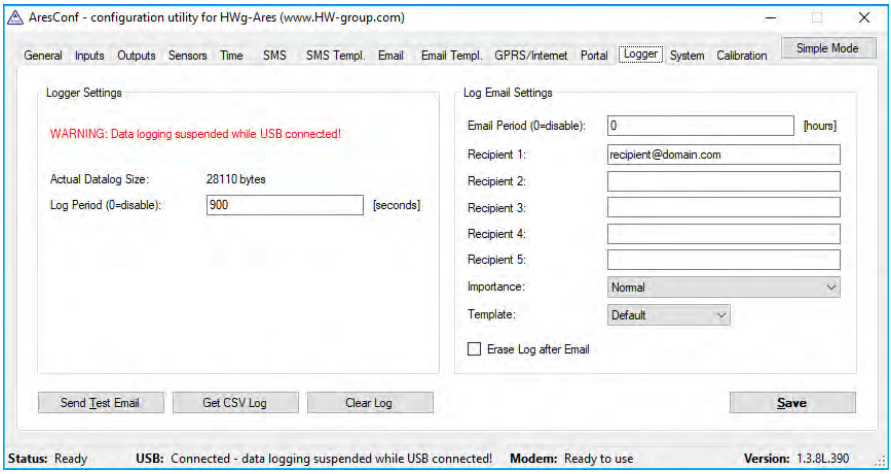
Sensors – informations of connected sensors (AP Delta – Difference of value to extra sending to portal).



Portal Debug – current setting of PUSH. Informations are provided by remote portal and Ares LTE is only reproduces.

- ***Push Period*** – period of sending values to portal in seconds.
- ***Log Period*** – period of logging in seconds. All values will be sended to portal in one package according of setting Push Period. Memory is for 10 values.

Logger

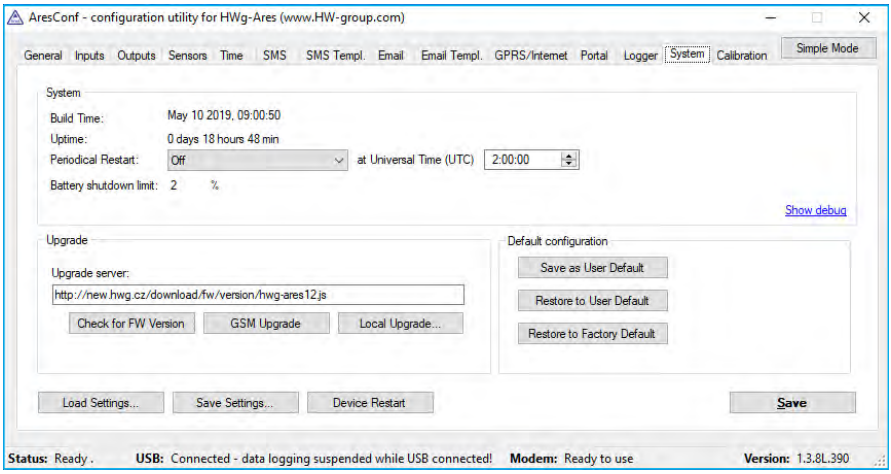


Use this tab to configure logging of measured values.

- *Actual Datalog Size* – current size (volume) of recorded data in bytes.
- *Log Period* – interval for storing measured values.
- *Email Period* – interval for e-mailing recorded values.
- *Recipient 1-5* – addresses of recipients for e-mails with logged data.
- *Importance* – importance of the e-mail message. Useful for mail filtering in e-mail clients.
- *Template* – e-mail template selection (Default, 1. e-mail, 2. e-mail, 3. e-mail, 4. e-mail).
- *Erase Log after Email* – deletes recorded values after e-mailing them.
- *Send Test Email* – sends a test e-mail to all listed recipients.
- *Get CSV Log* – one-time transmission of recorded data to CSV file.
- *Clear Log* – deletes recorded data.
- *Save* – saves all changes.

When the device is connected to PC via USB a notification is displayed informing about data logging suspension.

System

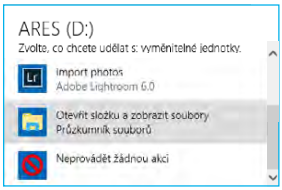


Use this tab to display and set system variables, upgrade firmware, and save or restore configuration.

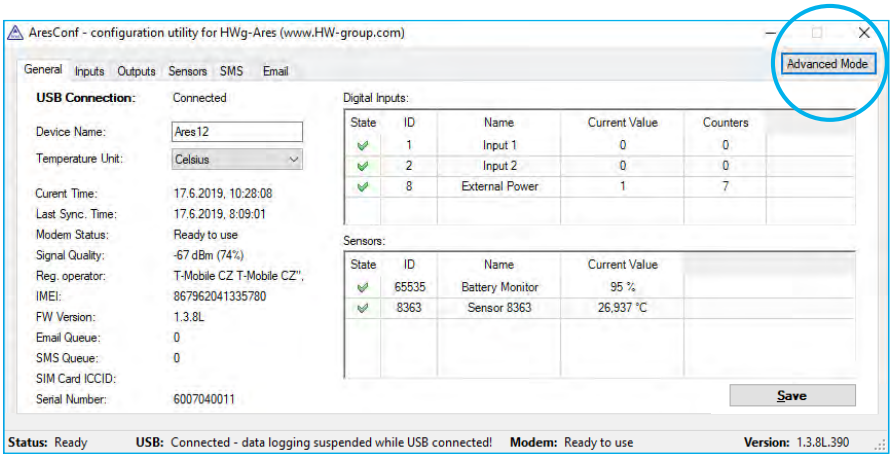
- *Build Time* – date and time of the current firmware build.
- *Uptime* – time since last restart.
- *Periodical Restart* – automatically restart the device:
  - ***Off*** – switched off.
  - ***Daily*** – once per day.
  - ***Weekly (every Sunday)*** – once every Sunday.
  - ***Monthly (every 1st day of month)*** – on the first day of every month.
  - ***At Universal Time (UTC)*** – time for the automatic restart (in UTC).
- *Battery shutdown limit* – sets built-in battery capacity limit which shuts down the device.*
- *Upgrade server* – firmware URL, or upgrade configuration file URL.
- *Check for FW Version* – if the URL of the config file is specified, checks for the availability of a firmware upgrade.
- *GSM Upgrade* – upgrades the firmware over GSM/GPRS. Correct address needs to be specified in the *Upgrade server* field.
- *Local Upgrade* – uploads firmware from the local computer through a standard dialog window.
- *Save as User Default* – saves user defined configuration.
- *Restore to User Default* – restores settings from user defined configuration.
- *Restore to Factory Default* – restores factory default settings of the device.
- *Load Settings* – loads a previously stored configuration from a setup.xml file.
- *Save Settings* – saves the current configuration into a setup.xml file.
- *Device Restart* – restarts the device.
- *Save* – saves all changes.

**Applies to Ares12 LTE only.*

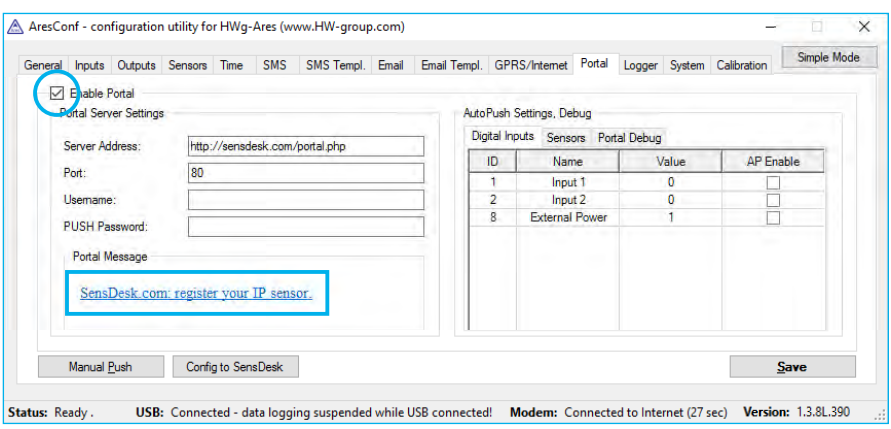
Connecting to the Portal



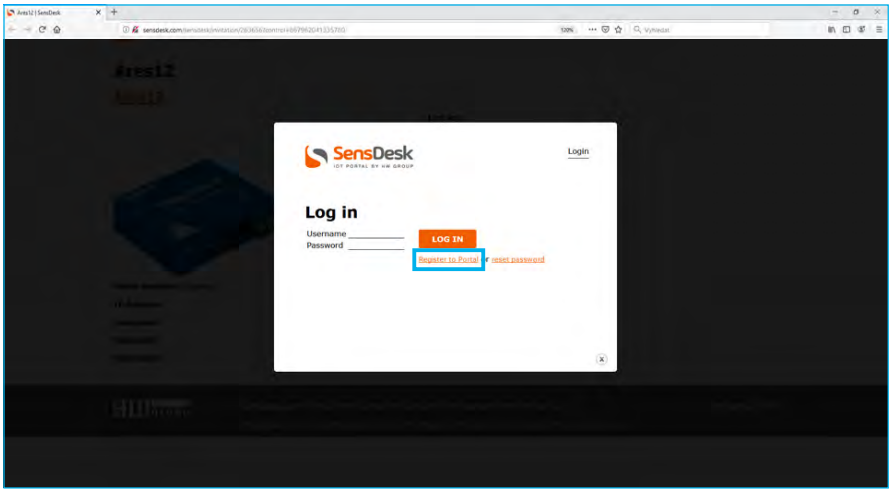
1 First power on the Ares LTE and connect it with your computer via provided USB cable. Ares LTE will appear on your PC as an external drive. In its main directory, open *ARESCONF.exe*.



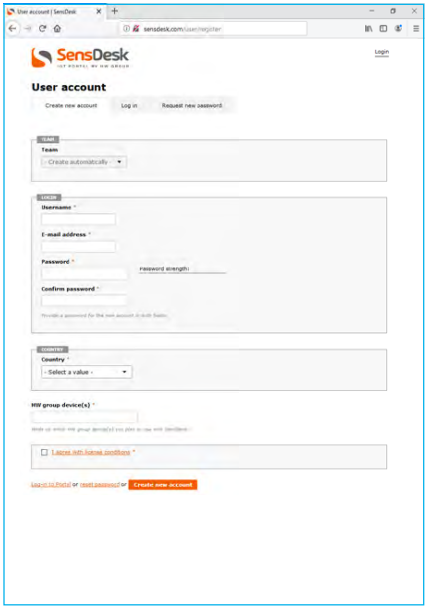
2 In AresConf, first switch to *Advanced mode* by clicking the button in the top right corner of the window, then go to *Portal* tab.

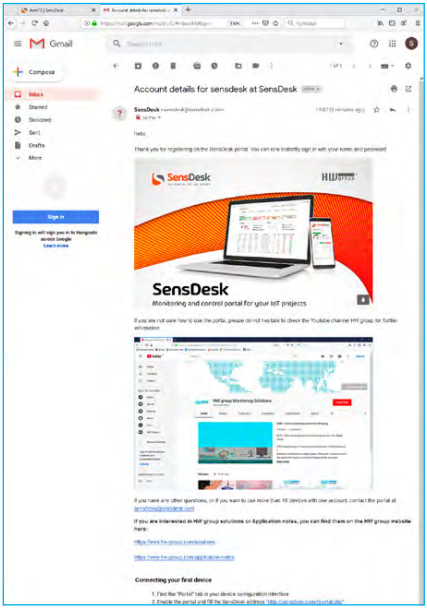


3 Tick the *Enable Portal* option and save the changes using the *Save* button in the bottom right corner of the window. Then click the *Manual Push* button in order to activate the portal function. Instead of "Portal disabled", a link *SensDesk.com: register your IP sensor* should appear in the *Portal Message* field. Click this link in order to get to the ***SensDesk.com*** portal.

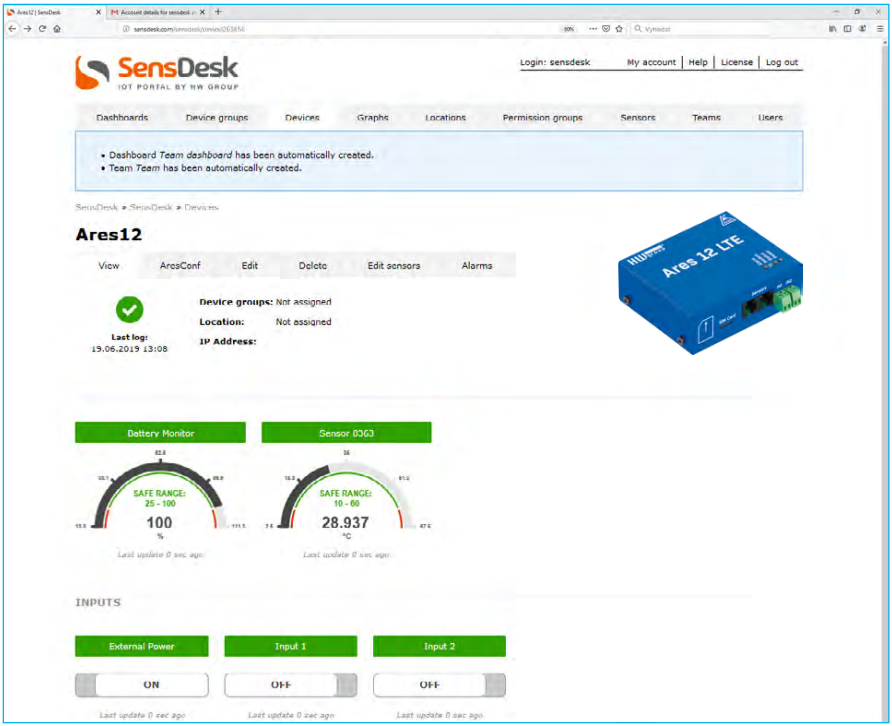


4 In case you already have a user account, please enter your login details and the device will be automatically assigned to your account. If you do not have a SensDesk account yet, click the *Register* and a registration form will be shown.

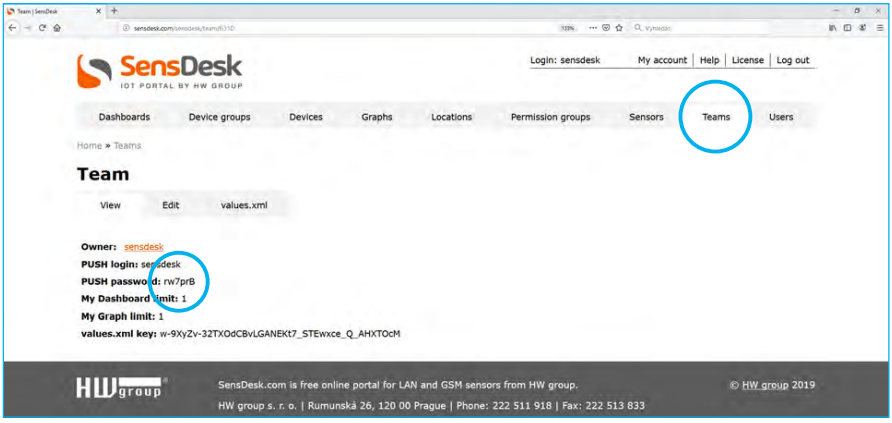




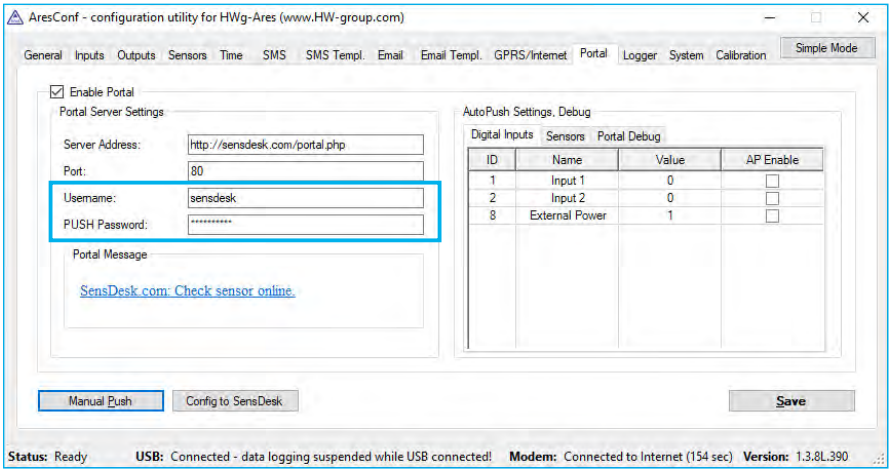
5 Enter the login details for your new account and a correct e-mail address. This e-mail address has to be unique for the server (cannot be already registered by another user).



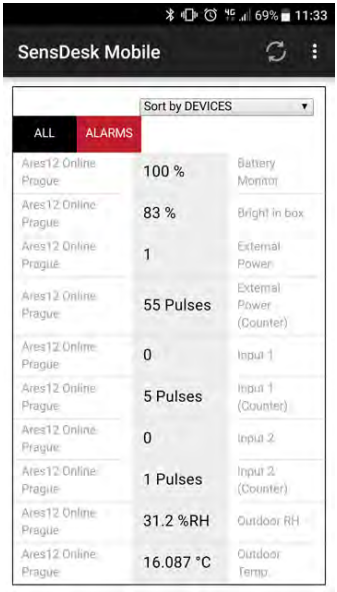
6 By activating the account, you will be redirected to the *Devices* > *View* page. At this moment, the data-sending period is set to 10 seconds to show the sensors functionality. This page is active only for approximately 15 minutes after the activation, then the logging period changes to 15 minutes.



7 If you check *Teams* link, you will find your *PUSH password*. This password, together with your login name, identifies the device in communication with your account and in communication of mobile applications with SensDesk. The password cannot be changed and for a security reason it is different to the login password.



8 *PUSH password* can be used in devices to skip the logging procedure during assigning the device to your portal account, or in mobile applications:



Portal function periodically sends the data to a remote server and the sending period is set by this server.

AutoPush is a function allowing unusual measured data sending, beside the periodical logging, in case that the value change is higher than the AutoPush delta parameter.

How to reduce operating costs

Ares LTE units offer functions for reducing overhead GSM/GPRS costs, particularly in the following scenarios:

- Networks that limit the maximum volume of transferred data.
- Subscribers without a flat-rate data plan.

Primary cost-saving options

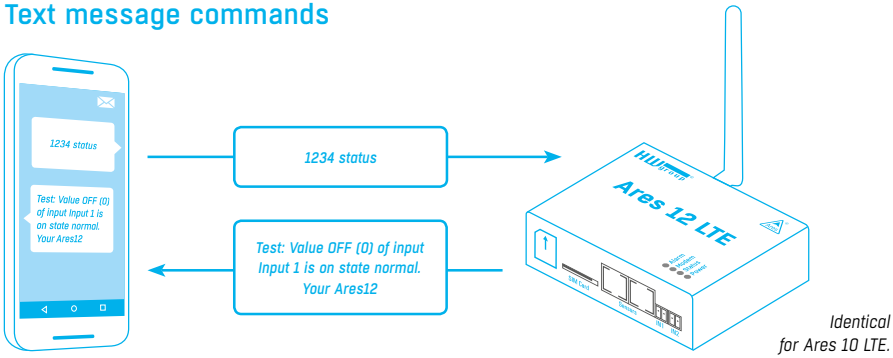
- Disabling GPRS/Internet functions.
- Disabling data services when roaming outside of the home network.
- Terminating GPRS connection when idle for longer than 60 seconds.

Special functions

Alarm information after power up

When any sensor or digital input is in alarm when the power is connected, all alarm messages according to Ares LTE configuration are sent as soon as the GSM/GPRS connection is established.

Text message commands



Identical for Ares 10 LTE.

1234 is the default password. You have to use it if your number is not listed as one of the 5 SMS recipients. In case you are not using the default password, it has to be only one-word password (cannot contain any breaks).

- *Status* or *Status SMS* – sends a text message with the current status.
- *Status Email* – sends an e-mail with the current status.
- *Reset* or *Reboot* – restarts the Ares LTE unit.
- *Debug* – returns debugging information.
- *Upgrade* – without further parameters, upgrades the firmware using the configured address. Full URL can be included in the message.
- *Push* – sends test PUSH to the address set in AresConf. The returned value contains sent information.
- *Push http://address* – sends test PUSH to the address set in the SMS. The returned value contains sent information.

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Configuration SMS

- *GETCFG variable* – obtains the information about the value of a variable.
- *SETCFG variable* – sets the variable to a requested value.

Use

SETCFG variable = value
SETCFG variable = value; variable1 = value1;... (max. 160 chars)
GETCFG variable
SETCFG variable; variable1;... (max. 160 chars)

Example

SETCFG device_name=AresSms Test;gprs/gprs_apn=internet1;gprs/gprs_number=12345
*SETCFG device_name=Ares12;gprs/gprs_apn=internet;gprs/gprs_number=*99***1#*
GETCFG device_name;gprs/gprs_apn;gprs/gprs_number

Names of variables are the same as the names in setup.xml within the <setup> section.

Example

```
<?xml version="1.0" encoding="utf-8"?>
<root>
        <setup>
                <host_name> Ares12</host_name>          >>> SETCFG device_name=Ares12
                <gprs>
                    <gprs_apn> internet </gprs_apn>     >>> SETCFG gprs/gprs_apn=internet
              </gprs>
      </setup>
</root>
```

Troubleshooting

- *Modem does not respond* – check the information in the Modem Status field on the General tab:
  - ***SIM unplugged*** – no SIM was found. Insert a SIM, or clean its contact pads.
  - ***Modem initializing...*** – modem is being initialized. This information should not appear for more than 10 s. Otherwise, it indicates a modem fault. If this message persists, check the SIM, clean its contact pads if necessary, and press *Reset* to restart the unit.
  - ***Invalid PIN*** – PIN code is not entered in the Ares LTE unit, or it is incorrect. Input the correct PIN in *Advanced Config Mode* on the *GPRS/Internet* tab.
  - ***PUK requested*** – PUK code is required (must be entered in a different kind of device). The SIM is blocked until the correct PUK is entered. Take the SIM out and unblock it in a mobile phone.
  - ***Dialling...*** – connection to the carrier is being dialed (necessary to establish GPRS connection). This information should not appear for more than 20 s. Otherwise, it indicates a modem fault. Check the *Dial number* in *Advanced Config Mode* on the *GPRS/Internet* tab. When in doubt, contact your mobile carrier.

- ***Configuring Internet...*** – internet connection is being configured (reading IP parameters). Check the *APN* in *Advanced Config Mode* on the *GPRS/Internet* tab.

- *Connected sensor cannot be found* – make sure that the sensors are properly connected.
  - Restart Ares LTE.
  - Press *Find Sensors* on the *Sensors* tab to detect the missing sensor.
  - Press *Delete All Sensors* to remove all sensors, then press *Find Sensors* to find them again.
- *I am receiving too many alarm messages* – check the hysteresis setting. By default, hysteresis is set to 1 without regard to the measured quantity. However, in some cases, this hysteresis is too low.

Internal memory size

Ares LTE is equipped with 2 MB internal memory for storing measured values. The available recording time depends on the number of values being stored. One value takes up 12 bytes of memory.

Therefore, 2048 kB × 1024 = 2,097,152 B /12 B = approximately 170,000 records (due to the internal memory organization, the actual number is slightly smaller).

Examples

3 values
Stored once per 300 s
170,000/3 = 56,666 records = 4722 hours = 196 days

1 value
Stored once per 30 s
170,000 records = 85,000 minutes = 1416 hours = 54 days

2 values
Stored once per 180 s
170,000/2 = 85,000 records = 4250 hours = 177 days

1-Wire UNI sensors

1-Wire sensors are connected using RJ-12 jacks. 1-Wire UNI sensors are a special kind of 1-Wire sensors. They communicate using the same protocol over the same interface but also contain added circuitry for connecting special probes. For this reason, 1-Wire UNI sensors may require an additional power supply.
When the 1-Wire UNI sensors do not explicitly require external power, a maximum of two 1-Wire UNI sensors can be connected to one Ares LTE port. More sensors can only be connected through the 1-Wire HUB Power (active hub).
1-Wire UNI sensors strongly influence how long the internal Ares 12 LTE battery lasts. This needs to be taken into account when planning your system.
For more information about connecting 1-Wire UNI sensors, carefully read the user manual for the respective sensor.

Customizing user messages

Ares LTE supports up to 4 user-defined custom types of e-mail and text messages. The following macro commands can be used to insert system variables, sensor names and measured values.

List of macro commands

Name	Description
General	General macros
%DEV_NAME%	Device name
%MSG_TYPE%	Message type (alarm, status, periodic)

Source sensor	
%SRC_TYPE%	Sensor name
%SRC_VALUE%	Current value
%SRC_UNIT%	Unit of the measured value
%SRC_STATUS%	Sensors: Invalid, Normal, Alarm, Out Of Range Digital inputs: Normal, Alarm
%SRC_MIN%	Lower limit of the Safe Range
%SRC_MAX%	Upper limit of the Safe Range
%SRC_ALARM%	Alarm begin/end

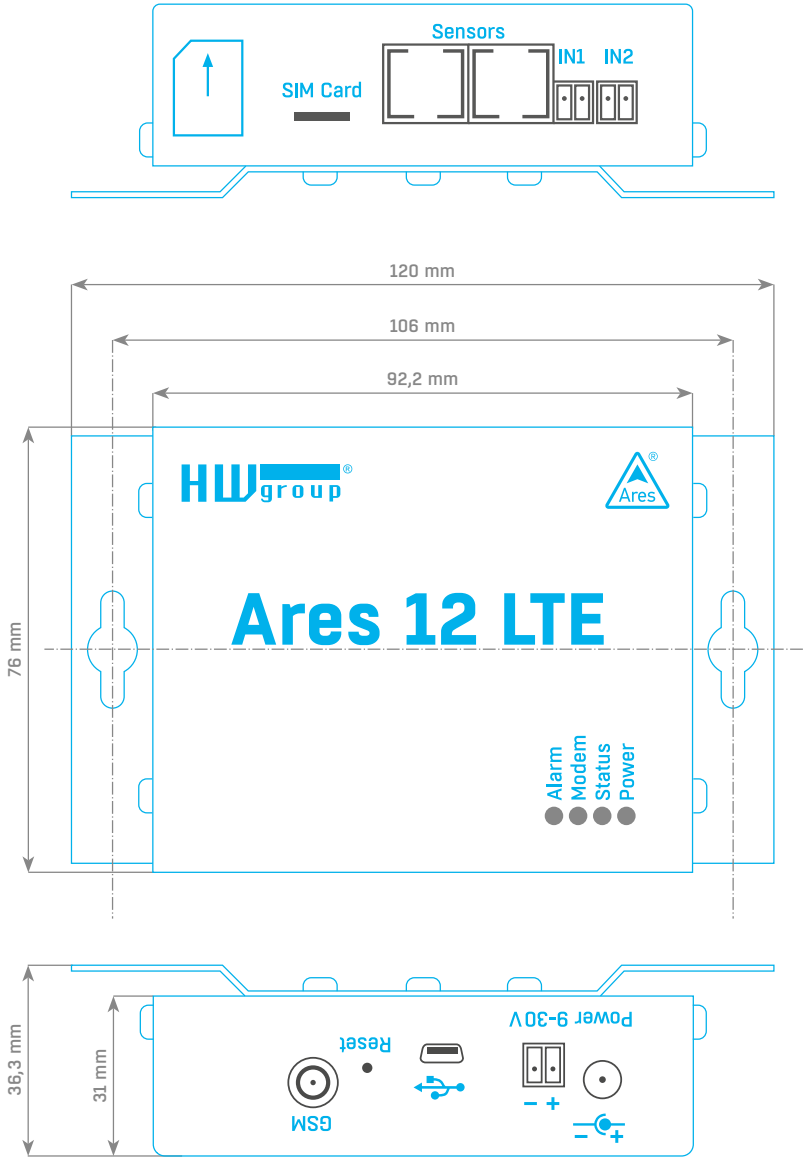
Sensor with ID=XXXX	Information about other sensors to include in the message
%NAME_XXXX%	XXXX sensor name
%VALUE_XXXX%	XXXX sensor reading
%UNIT_XXXX%	XXXX sensor unit of measurement
%STATUS_XXXX%	Sensors: Invalid, Normal, Alarm, Out Of Range Digital inputs: Normal, Alarm
%MIN_XXXX%	Lower limit of the Safe Range XXXX
%MAX_XXXX%	Upper limit of the Safe Range XXXX
%ALARM_XXXX%	Alarm begin/end

SMS	
%TABLE SENSORS%	Chart of status and values of individual sensors
%TABLE INPUTS%	Chart of status and values of individual inputs

Format and datalog description

Detailed description of XML and datalog formats can be found in AN51 on HW group website.

Mechanical parameters



Identical for Ares 10 LTE.

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Other HW group devices from Monitoring category

Poseidon2 3266/3268

The basic unit for monitoring temperature, humidity and other enviromental conditions across LAN.

Poseidon2 3468

Remote monitoring of temperature, humidity and other enviromental conditions in industrial design.

Poseidon2 4002

Unit designed for demanding monitoring applications, e.g. in data centers and industry.

Damocles2 2404

Secure industrial I/O with PoE and telco -48V power options.

HWg-WLD

Unit for detecting flooding with detection over the entire length of the sensing cable.

HWg-PWR 3/12/25

Measures power consumption using external M-Bus meters.

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