# TAIGA

## GSM/GPRS/3G/PSTN Standalone RTU for Gas Monitoring Applications


SIS introduces its new GSM/GPRS/3G/PSTN standalone RTU for gas monitoring applications, *TAIGA*.

ATEX-certified, its small size makes *TAIGA* the ideal solution for gas monitoring in all types of locations. *TAIGA* GSM/GPRS/3G won't require any connection to an electric power supply or communication cable, thus providing greater flexibility for installation and operation in any location.

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## TAIGA Description

*TAIGA* is a low power Remote Terminal Unit. *TAIGA* is the ideal solution for a basic requirement for managing a standard gas station as well as for a more sophisticated requirement for managing a big gas station including gaz flow converter, chromatograph, ...
The internal GPRS/GSM modem is only activated for real-time alarms transmission and for periodical alarms transmission.
All analog and digital inputs status and the stored data are transmitted during the periodical alarms transmission. This function provides to *TAIGA* an efficient management of internal battery lifetime and provides an important autonomy. In case of external power supply, the GPRS/GSM modem is activated permanently.
*TAIGA* can be either Master or Slave

## TAIGA Technical

| | |
|---|---|
| **Input/Output** | • 6 Digital inputs including one that can be configured for low frequency pulse input (16 Hz max.) of which 2 inputs for power failure and low battery failure, or solar panel failure, compatible with ALEX power supply(230Vac or solar)<br>• 2 pressure sensor inputs<br>• Extension of input/output capabilities by capabilities by bridging up to 3 Taïga together linked linked by RS232/485 in Modbus protocol |
| **Pressure** | • External pressure sensor<br>• 5-metre cable<br>• 1/4" gas connection<br>• Pressure ranges:<br>▸ 10-50 mbar relative<br>▸ 1-28 bar relative<br>▸ 10-35 bar relative<br>▸ Other ranges (on request) |
| **Communication** | • Integrated class 10 GSM/GPRS/3G modem with antenna fixed in the enclosure. (external antenna in option)<br>• PSTN modem instead of GSM/GPRS/3G modem<br>• 1 USB port for PC connection<br>• 1 RS232/485 port for Modbus link with other devices (gas volume converter, PLC, Chromatograph, ...) Up to 3 external devices can be connected in RS485. |
| **Power Supply** | • Single internal lithium cell, user replaceable (typical four-year lifetime in push mode)*<br>• Battery Pack for over 2 years autonomy<br>Optional:<br>• ATEX external power supply (ALEX)<br>• ATEX solar power supply (ALEX) |
| **Display** | • Display with 7 lines of 20 characters and 2 multifunction buttons for menu navigation<br>• Checking of alarms and real-time status of inputs (positions of valve, measurement, ...), status of thresholds, general status (battery level, GSM transmitters, optional external power switch, etc.) |
| **Installation** | • *TAIGA device :* IP65 polycarbonat enclosure 175mm H x 185mm W x 90 mm D.<br>• Battery Pack : 175mm H x 181mm W x 90mm D, weight : 4.75 Kg<br>• Alex power supply : 175mm H x 185mm W x 90 mm D.<br>Optional:<br>▸ Pipe mounting<br>▸ DIN-rail mounting<br>▸ Other installations available on request (grid, cabinet, ...) |
| **Certification** | • *TAIGA*-IS with internal lithium cell or battery pack : ATEX Certification LCIE 10 ATEX 3098 X CE0081 Ex II 1 G Ex ia IIA T4 Ga or Ex ia IIB T4 Ga<br>• *TAIGA*-IS with external power supply : ATEX certification LCIE 09 ATEX 3065 X CE0081 Ex II (1) G [Ex ia] IIA T4 Ga or Ex ia IIB T4 Ga |
| **Environment** | • Operating temperature: -25°C to +70°C<br>• Storage temperature: -40°C to +85°C<br>• Relative Humidity: 10 to 93% non-condensing |

## TAIGA Functionalities

| | |
|---|---|
| **Digital inputs** | • User-defined labels<br>• Time-stamping and storage of status changes |
| **Metering** | • Current unconverted index and current flow value<br>• In case of gas flow converter linked by RS232/485: pressure, temperature, flow values and hourly, daily and monthly volumes from the gas flow converter |
| **Measurements** | • 2 pressure measurements and one flow calculation from pulses delivered by meter<br>• Time-stamping and storage of measurements over fixed time periods or variation change (user-defined)<br>• 2 pairs of user-defined alarm thresholds with hysteresis (high, very high, low, very low) |
| **Remote alarms** | • Acknowledgement of alarms by on-site operator or remote SCADA<br>• Protocols : Modbus, IEC870***, Sevbus,...<br>• 6 recipients (SMS or SCADA) with option for automatic SMS recipient<br>• Number of attempts and time between calls, user-defined |
| **Internal data** | • Remaining battery power, external power, internal temperature and GSM/GPRS transmitters<br>• Power failure, low battery level, remote test, 80% battery history, increased monitoring and active Modbus link |
| **Data logger features** | • Rotating store and time-stamping data<br>• Digital inputs log : 300 records<br>• Analog inputs log : 17,200 records (for ex.: 30 days for 2 AI, 5 mn time-stamping)<br>• Periodical analog input log (minimum, maximum and average data) : 100 days for hourly data and 120 days for daily data<br>• Storage of 400 most recent events including alarms, general status,... |
| **Modbus link** | • 1200 to 38400 baud rate set by user<br>• User-set master-slave control of communication port<br>• Data Table Exchange (on request) |

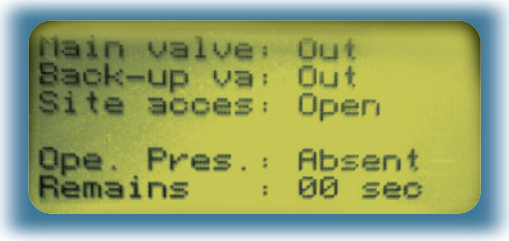
Integration example

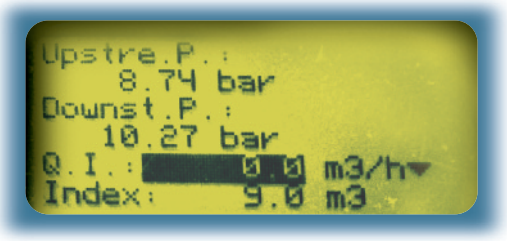
* Depending on operating conditions
** Depending on capabilities of linked gas flow converter
*** Q2 2014

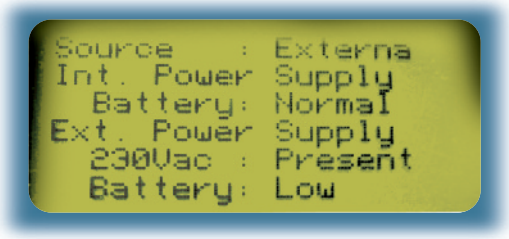
## TAIGA Man / Machine Interface

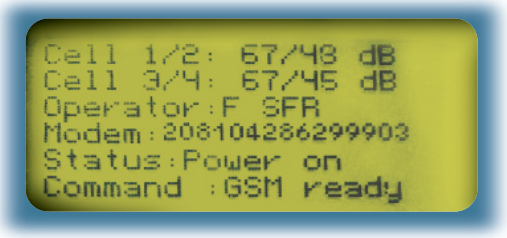
**• Display**

*TAIGA* includes a graphic LCD with 20 characters per line and two multifunction buttons. Basic information can be viewed on site using the display without the need for a PC and SESAME software.




**• Software**

*TAIGA* can be configured and operated by a portable PC using SESAME software on site or remotely using its friendly, intuitive user interface. (See SESAME data sheet.)

## TAIGA Configuration, operating and maintenance

**Display : D Sésame : S**

| Configuration | D | S |
|---|---|---|
| Digital or pulse inputs (DI) | | ◆ |
| Pressure and flow measurements (AI) | | ◆ |
| Alarm thresholds (high, very high, low, very low) | | ◆ |
| Communication ports (Gas Flow converter, chromatograph, ...) | | ◆ |
| Alarms and contact on-duty personnel (recipients, etc.) | | ◆ |
| Intense monitoring and periodic alarm | | ◆ |
| Alarm disabling in on-site operator presence | ◆ | ◆ |
| Communication protocols (Modbus RTU, Modbus TCP, etc.) | | ◆ |
| System information | | ◆ |

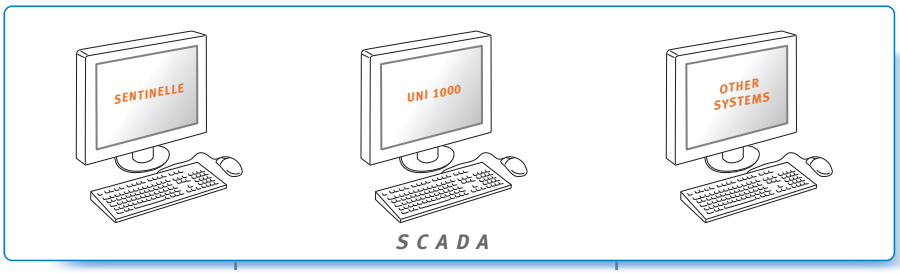
| Maintenance | D | S |
|---|---|---|
| GSM/GPRS transmitter status | ◆ | ◆ |
| Initialisation of battery level and time set | | ◆ |
| Sensor calibration | | ◆ |
| Event log | | ◆ |
| Upload/download log | | ◆ |

| Consultation | D | S |
|---|---|---|
| Unacknowledged current alarms | ◆ | ◆ |
| Real time status of DI, AI, ... | ◆ | ◆ |
| Alarm thresholds of AI | ◆ | ◆ |
| Power supply level (battery life, etc.) | ◆ | ◆ |
| Alarm status | ◆ | ◆ |
| Hourly and daily data logs | | ◆ |
| AI data logs | | ◆ |
| DI status logs | | ◆ |
| Alarm log | | ◆ |
| System information | | ◆ |

## TAIGA Services

In order to provide its customers with a total solution, SIS offers a wide range of services to respond effectively to current market needs:

- Installation and operation
- Short-term and annual preventive and corrective maintenance contracts (equipment pool)
- Simplified ATEX diagnostics are performed systematically for the equipment we manufacture during our site visits




01 1001 100

USB

GSM - GPRS - 3G

PSTN

Laptop PC + SESAME

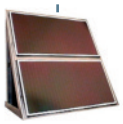
01 1001 100
(MODBUS)
RS232/485

Gas Flow Converter

PLC

CHROMATOGRAPH

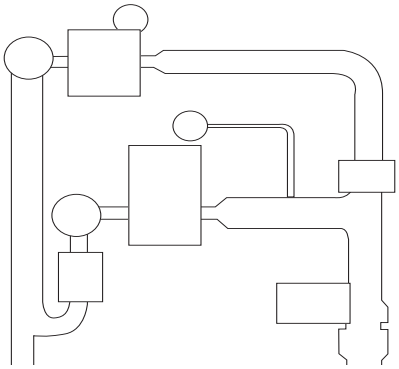

ATEX power supply
(option)



P Inlet

Shut Off Valves, pressure switches, meter, ...

P Outlet



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