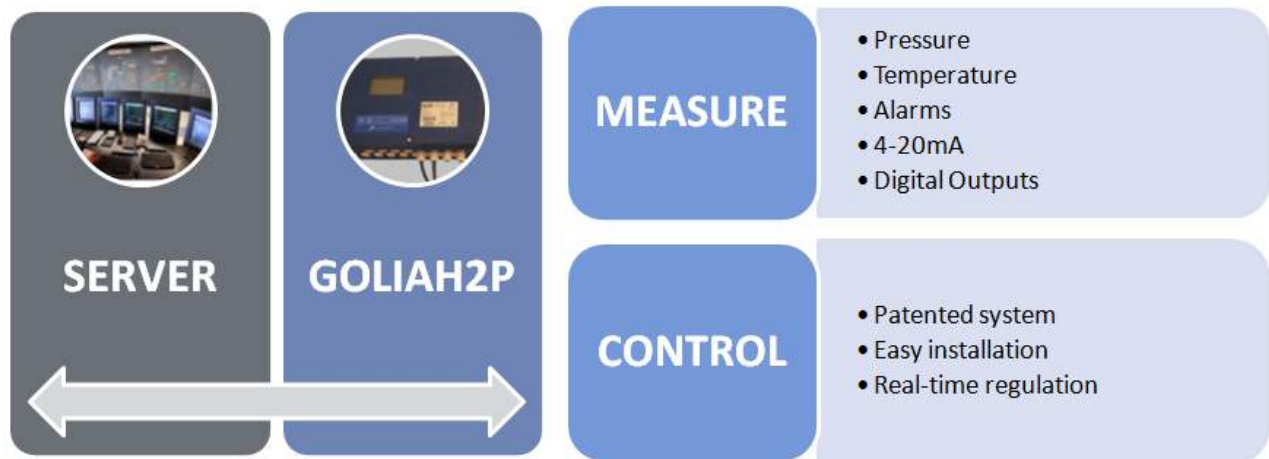


# golem

## Remote control of pressure regulators in areas at risk from explosive atmospheres

**golem** is the solution that allows you to fulfill the most binding requirements of measure and control: it combines the high performance and capabilities in terms of measurement of the solution **goliah2-p** with a motor **SPECIFICALLY DESIGNED** and **PATENTED** (Patent Pending) by **AUTOMA** to perform the remote control of regulating valves.

The solution **golem** can be installed directly in the cabins of pressure regulation or in areas at risk from explosive atmospheres.



## MEASURE

The measure function is guaranteed by the **goliah2-p**: a device with high flexibility according to the configuration and the usage of many manageable signals (transmitters, indicators, temperatures, digital). There are 6 integrated pressure sensors, 2 temperature sensors, 8 digital inputs (for management of alarms or volume counters), 2 digital inputs O/I, 8 analog inputs for transmitters 4-20mA, 2 digital outputs O/I. The device uses the volume correction algorithm **PTZ SGERG88**.

The device **goliah2-p** is **ATEX** certificate with CE type number **IMQ 11 ATEX** and protection mode **II 2G Ex ib IIB T3 Gb Tamb: - 20 °C ÷ + 60 °C**.

The **goliah2-p** has a low power consumption and can receive power from different sources: a battery pack **BATLONG** issued by **AUTOMA** (with **ATEX** certification or non), external power supply DC 12-36V, solar panel (10W enough for the functioning in real-time), universal power supply 85-265V @50/60Hz by means of a suitable PELV transformer.

The **goliah2-p** can work as a data-logger, acquiring data and spontaneously communicating them to the server (1 or 2 calls per day). In this mode the device consistently records the data in a report with variable rate (minutes, hours, days). Alternatively the data logger can work as RTU, periodically questioned by MODBUS protocol (GNC, SIEMENS, RTU, ASCII, ENRON). It's possible to integrate it with existing protocols.

The **goliah2-p** is equipped with a modem, **ATEX** certified, provided with **dual SIM** for **GPRS communications**. It is also equipped with a **RS485** communication port, also **ATEX** certified, with which it's possible to communicate in Ethernet, radio, satellite and optical fiber.



## CONTROL

**golem** integrates the functions of the **goliah2-p** making possible to remotely manage and manipulate gas regulation station referred to as a "direct regulation" and those classified as "with pilot device".

Usually, this action is only done in manually through operation of mechanical rotation carried out by operator, causing the non-possibility to hasty act in case of failures or signals of abnormalities and to carry out operations of pressure regulation once only in the phase installation or maintenance of the regulator itself.

The new system **golem** exceeds this tie:

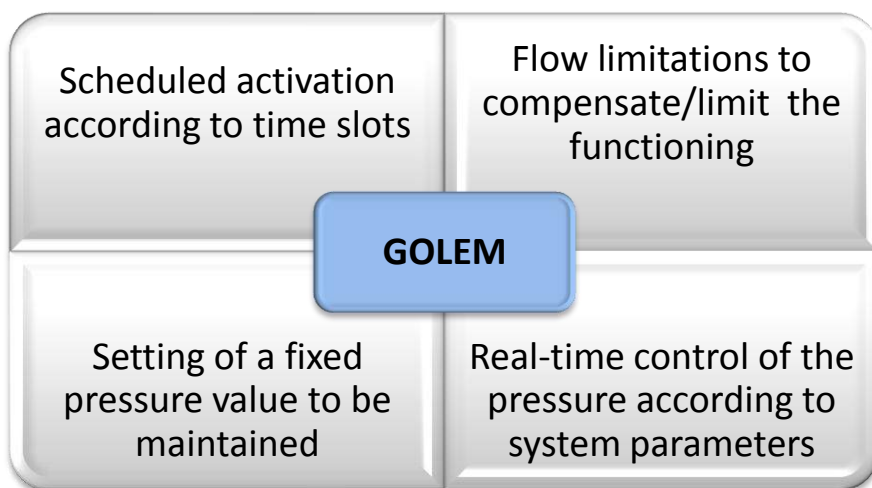
### REAL-TIME CONTROL

- Remote Control of the regulating valves
- Feedback in real-time of the reached pressure

### NO PLANT MODIFICATION

- Use in plants with manual control already in place
- No necessary change in the plant
- No obligation to change the site to new one

The **golem** system offers the following possibilities:



The control is provided by an electrical motor realized by Schischek GmbH certified ATEX with UE type number **PTB 04 ATEX 1028X** and protection mode **II 2(1)G Ex d [ia] IIC T6,T5 o T4 e II 2(1)D Ex tD [iaD] A21 IP66 T80,T95 o T130°C**.

### goliah2-p FEATURES



The basic features, common to all versions are:

- ✓ Micro controller: RISC 80 MIPS; RISC 80 MIPS;
- ✓ Working Memory: 512 KB FLASH, 16 KB RAM;
- ✓ A/D converter Type 24 Delta-Sigma Bit;
- ✓ FLASH Storage Memory: up to 5 blocks of 8 MB each ;
- ✓ MiWi wireless local communication port with the PC;
- ✓ Communication Port RS485 ATEX certified;
- ✓ OPTIONAL: user interface console, with a graphic display LCD 128 x 64 pixels, activated on request, with 6 button keypad;
- ✓ MODBUS Standard Communication Protocol (ASCII, RTU, ENRON, TCP/IP) to facilitate the interfacing with the existing operative centre based on SCADA.
- ✓ IP67 Tamb: -20 °C to +60 °C

Various models differ in the following aspects from these basic characteristics

#### 1. Installation Zone:

- ATEX certified, n° IMQ 11 ATEX 034 X
- II 2G Ex ib IIB T3 Gb Tamb: - 20 °C ÷ + 60 °C
- Standard, for use in a safe area

#### 2. Type of sensors:

- With pressure sensors with Wheatstone Integrated bridge
- With expansion card for 4-20mA transmitters
- With PT100/PT1000 temperature sensors

#### 3. Power Source: Depending on the use,

- by batteries (normal or high-capacity, for use in real time)
- from the mains
- from solar panel

By combining various options the device can arrive up to:

- 6 Pressure sensors and 2 PT100/PT1000
- 8 Digital Inputs (level or impulsive)
- 2 Digital Inputs "lenses" (max. 1 Hz)
- Up to 8 analogue inputs, for transmitters 4-20mA
- 2 Digital outputs, O/I contact

All versions can be equipped with

- Flanges for mounting on a wall;
- ATEX Voltage Regulator (where necessary).

Depending on the chosen power source:

- Battery Pack
- Solar Panel Kit, composed with:
  - solar panel (10 W),
  - charge regulator
  - gel battery 10 years of operation
- Power Adapter from electrical network

## CONTROL CHARACTERISTICS

#### Electric motor:

- Rotary 5Nm or 10Nm (selectable)
- Multi lap
- 24/240Vac/dc (automatic regulation)
- On/off
- 4 different motor running time (60-120-240-480 sec./360°)
- Direct Action
- ATEX Certified n° PTB 04 ATEX 1028 X, for zone 1, 2, 21 y 22
- II 2 G/D EEx d ia IIC T6, T5 o T4
- II 2(1)D Ex tD [iaD] A21 IP66 T80,T95 o T130°C
- IP66 T80°C o T95°C



## INSTALLATION OVERVIEW

Installing **golem** powered by solar panel.



Installation detail of the unit of **measurement-control-survey-regulation goliah2-p**



Engine installation detail





DETAILS OF MOTOR POSITIONING ON THE PILOT WITHOUT PLANT CHANGES.



Detail of the wiring for zone 1 ① , the driving system of the motor ② and the 24V DC battery supply ③.

