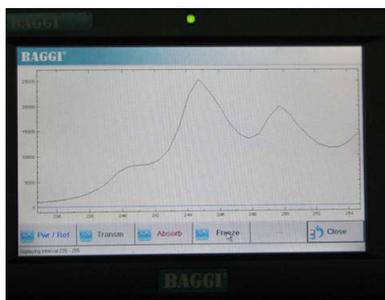


## BAGGI BA-DALS Data Acquisition and Logging System

The BAGGI BA-DALS complements the **BAGGI BASE®** Instruments Series. They are the result of combining the latest state-of-the-art-technology with over 50 years of industry experience.

The BA-DALS is a Data Acquisition and Logging System that meets all the industry signals and protocols standards. It can act as a SCADA system, providing closed loop control functions. Upon request, it is available for operation in an explosive atmosphere (ATEX) environment. It offers an



outstanding flexibility and can be easily customized according to customer's requirements due to:

✓ The modular and replaceable building blocks used for interfacing the I/O signals

✓ The capability of easily updating and upgrading the software that operates and controls the whole system.

The system is controlled by an embedded computer running the **BASE®** application software.

The figure shows an ATEX certified version, contained within a Stainless Steel 316L enclosure provided with a protective air purge system and a Vortex cooler (connected to the plant instrument air). Magnetic push buttons allow controlling the system without opening the cabinet.

ATEX compliance:

- II 2 G Ex px II T6
- II 3 G Ex pz II T6

The applications are coded using a high level Object Oriented Language. The main software packages are:

- GUI package: Graphical User Interface for inputting commands via menu driven interfaces and displaying the measurements in tabular and graphic format.
- Data Base package: the data are archived and exported in standard CSV format.
- PLC package: this package allows executing all the functions of a Programmable Logic Controller for controlling actuators and closed loop operation.

- Alarms package: it allows to associate filters and alarm thresholds to each of the input signals and activating a related output signal.
- Signal processing (mathematical) package: to derive measurement results from raw sensor data, e.g. the calculation of flow rate by means of differential pressure measurements in a Venturi tube, corrected by temperature measurements.

A watch-dog device polls continuously the health state of the computer and the pressure within the pressurized enclosure (Atex version).

The analog and digital input/output signals are bundled into independent specialized hardware modules, contained in the same enclosure as the computer. Examples of modules are:

- Analog input signals
- Analog output signals (0/4...20 mA)
- Opto-isolated digital inputs
- Digital outputs
- Thermocouple inputs (type J, K, R, S, T, E, B, N)
- RTD inputs (Pt-100, Pt-500, Pt-1000, Ni-100) 3, 4 wire
- Resistance up to 15 KΩ
- Strain gauge input



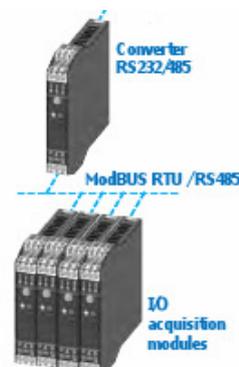
The modules listed above, in charge of the physical input/output, are linked to the BASE® computer by means of a RS-485 bus, running the ModBUS protocol. One of the modules converts the RS-485 signals to/from RS-232 signals; these latter are seen directly by the computer. Please refer to the figure. The bus is internal to the enclosure.

The BASE® enclosure hosts the computer, the internal RS-485 bus and up to 32 modules. The corresponding I/O channels can be up to 256 (depending upon the type of the physical line).

In large installations, when more channels are needed, it is possible to connect the BASE® computer to one or more additional enclosures. These ones do not include a computer and have room for 64 modules (up to 512 channels) each. The additional enclosures can be located at any desired distance;

the connection can be over wires, fibre optics or radio links.

The BA-DALS can communicate with a high level control centre using standard protocols over the TCP/IP suite; it can be easily managed with a Web interface. For that purpose, two RJ-45 Ethernet ports and a WiFi 11Mbit/s port are available on the BASE® computer.



## Specifications

### Process inputs

- Analogue channels (current up to 20 mA, voltage up to 10 V, typical)
- Digital channels (for reed relays, proximity switches, npn & pnp and contact closure)
- Thermocouples J, K, R, S, T, B, E, N
- RTD Pt100, Pt500, Pt1000, Ni100, KTY, NTC
- Strain gauge load cell
- Resistance (potentiometer, rheostat)

### Process outputs

- Analogue channels (0/4...20 mA)
- Digital channels (relay output, mosfet output)

### Serial communications

RS-232/RS-422/RS-485 with Modbus/Profibus/FieldbusFoundationProtocol

### Remote communications

- Ethernet (two RJ-45 ports at 10/100 mbps)
- WiFi at 11 Mbit/s
- Radio link at 434 MHz (869 MHz optional)
- Dual band GSM 900/1800 MHz

### Software packages

- Data Acquisition and Recording
- Data Exportation in standard format
- Log files generation
- Alarms and Communications management

- Graphical display
- Web interface
- Mathematical package
- PLC programming tools (IEC 61131)
- Self-Diagnosis

### Power

90-264 VAC, 47-63 Hz; 6A max

### Enclosure Dimensions/Weight

Wall Mount: 500mm H x 400mm W x 250mm D (19.68" H x 15.74" W x 9.84" D)  
- Weight: 15 Kg approx.

### Environmental conditions

- 0 °C to 40 °C (32 °F to 104 °F)
- 0 °C to 55 °C (32 °F to 131 °F) with vortex cooler

### Enclosure protection

IP66

### Compliances

EN 61326, EN 61010-1  
- ATEX (optional)  
II 2 G Ex px II T6  
II 3 G Ex pz II T6

All the specifications subject to change without notice  
For specific requirements, please contact:  
[info@baggi.com](mailto:info@baggi.com)

