

# CONFIGURABLE MODULE FOR DATA ACQUISITION

multi-function, multi-loop

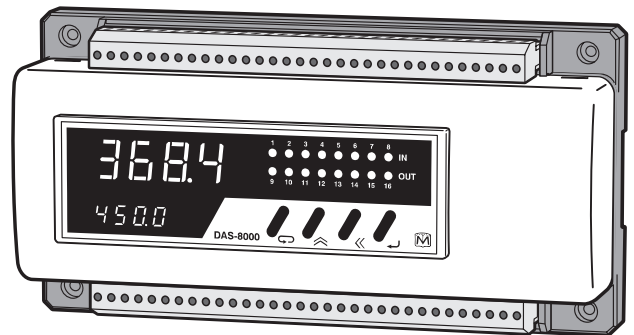
# DAS-8000

**Desin**  
Instruments

## DESCRIPTION

Data acquisition and control module for analog input supervision and logic input commands in industrial process control.

- ACQUISITION OF ANALOG MEASUREMENTS AND DATA WITH REMOTE COMMAND (1,200 metre)
- REMOTE CONTROL OF LOGIC ACTUATORS
- CONFIGURABLE VIA BUS OR LOCALLY BY MEANS OF REMOVABLE FRONT PANEL FOR PROGRAMMING AND/OR MONITORING
- 8 ANALOG INPUTS
- 8 LOGIC INPUTS & 8 LOGIC OUTPUTS
- 8 PROGRAMMABLE ALARM LOOPS
- TWO COUNTERS FEATURING RESET, INHIBITION AND PRESET
- CONFIGURABLE INPUTS AND RANGES EITHER AS Pt 100, 0...4-20 mA, mV, or V
- THERMOCOUPLE LINEARIZATION (E, J, K, T, S, R, B and N) ON UNLINEARIZED 4-20 mA INPUTS
- ONE CUSTOM-BUILT CURVE (UP TO FIFTEEN SEGMENTS)
- SIMULTANEOUS DISPLAY OF ACTUAL VALUE INPUTS, ALARMS, AND THE OTHER PARAMETERS
- DIN RAIL, WALL, OR PANEL MOUNTING
- HIGH RESOLUTION A/D CONVERTER
- RS-485/RS-232 SELECTABLE COMMUNICATIONS FORMAT
- DIRECT OUTPUT TO PRINTER (RS-232)
- ALLOWS USER TO WORK INDEPENDENTLY, OR ON MULTIPOINT NET WITH UP TO 255 UNITS (MODBUS)



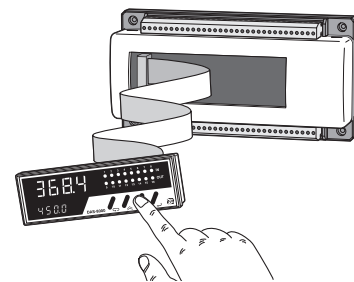
## FEATURES

Data acquisition and supervision module that works stand-alone or controlled from a smart system such as PC, PLC, etc. Allows up to 8 analog inputs, which can be configured as Pt 100, mV, V, and 4-20 mA. It has 8 digital inputs that are able to capture logic data (contact, pulse, proximity detectors, other relay equipment, etc.) for supervision, or to include them in logic functions.

It also has 8 logic outputs, that can be controlled based on the alarm conditions triggered by analog inputs, logic functions with digital inputs, or as a remote control for communication with the central unit (PC).

Communication between modules and the central unit (PC) is accomplished by a speed configurable RS-485 link. When only point-to-point communication is used, an RS-232 C classic link is used.

There is also a second RS-232 C link, that allows the user to connect a printer directly with a group of modules connected through a BUS, for real-time data recording.



**DAS-8000** can be configured from a central unit, i.e. a PC, through the RS-485 communications BUS, and also by an extractable, front-mounted, multi-function terminal.

This same front panel is extractable, **up to 2 metre detachable**, so it can be mounted on the door of a control cabinet, leaving the main part of the **DAS-8000** on the bottom of the cabinet as a terminal block of the signal and/or control lines.

## SPECIFICATIONS

### CONFIGURABLE CHANNELS

- Analog inputs: ..... 8 channels (common mode) configurable by internal jumpers such as:

- **RTD** Pt 100 ..... -302° +1112 °F (-150° +600 °C.) (3-wire connection)
- **LIN** mV and V ..... 0 - 50 mV (1 Mohm impedance)
- **LIN** 0...4-20 mA ... 0...4-20 mA (2.5 Ohms shunt 0.5%)
- **LIN** (Unlinearized TC) ..... 4-20 mA, 2.5 ohm shunt  
Available TC: E, J, K, T, S, R, B and N

- User-configurable curve: ..... 15 segments  
 - Definable ranges: ..... -1999 to +9999 points  
 - Precision: ..... 0.1% F.R.  
 - A/D converter resolution: ..... 40,000 points  
 - Data acquisition speed: ..... 125 ms.  
 - Filter: ..... digital, software adjustable  
 - Logic inputs: ..... 8 (opto-insulated) 12 to 48 Vdc/Vac  
 - Logic outputs: ..... 8 (opto-insulated)  
 Transistor (open collector), 48 Vdc 100 mA resist.

Note: ..... All inputs and outputs have electric insulation

- Alarm loops: ..... Eight with adjustable hysteresis

### DIGITAL COMMUNICATION

- Output: .... RS-485 (2 wire) or RS-232 (3 wire) selectable  
 - Protocol: ..... Modbus, RTU mode (binary)  
 - Transmission speed: ..... 9600, 19200 or 38400 Bauds  
 - Addressability: ..... 1 to 255 address  
 - Direct output to printer: ..... RS-232 (Epson protocol)

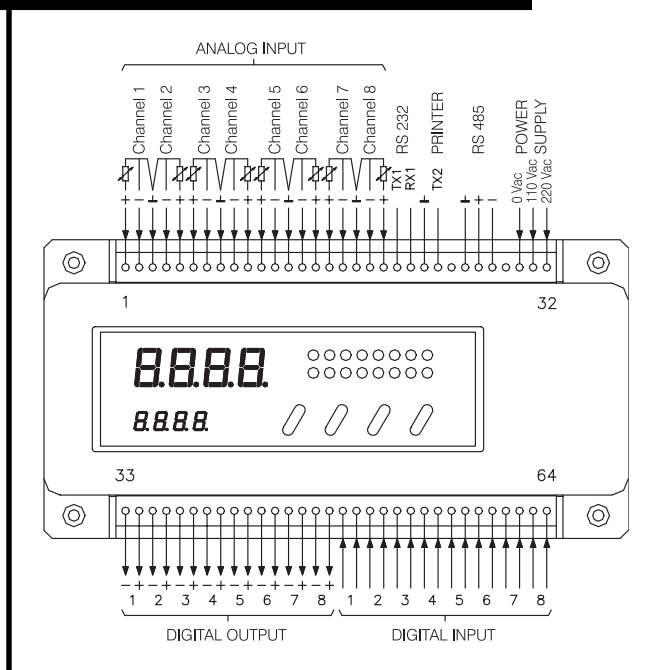
### GENERAL

- Front terminal: ..... Up to 2 metre detachable  
 - Front display: ..... 4 + 4 digit, 16 LED pilot, 4 keypads  
 - Electric connection: ..... 2 rows of 32 terminals (plugged/unplugged) for cables of 2 mm. in Ø max.  
 - Mounting: ..... rail DIN 46277-3 EN 50022 or by means of screws  
 - Operating temperature: ..... 32 to 122 °F (0 to 50 °C)  
 - Power supply: ..... 110/220 Vac, 5 VA

### STANDARDS

- (C) European Directive: 89/336/EEC:  
**EN 50081-2** Generic Emission Standard  
 EN 55011 Group 1, Class A  
 RFI Electromagnetic Fields  
 Conducted Disturbances  
**EN 50082-2** Generic Immunity Standard  
 ENV 50140 RFI Electromagnetic Fields  
 EN 61000-4-2 Electrostatics Discharges  
 EN 61000-4-4 Fast Transients  
 - Low voltage Directive 73/23/ECC:  
**EN 61010-1** Safety requirements for electric equipment

## WIRING DIAGRAM



0128 H129-24-1

## APPLICATIONS

### Data acquisition:

Refrigerators. Dryers. Food-processing. Heat-related processes, etc.

### Supervision:

Grain silos or perishable products. Tank level and management. Hotels and buildings, etc.

### Regulation:

Smart buildings, air conditioning, tunnel furnaces for ceramics, painting, food industry.

### Control:

Production management, time and objects counting, presence control.

### ARCHITECTURE:

It can act as a:

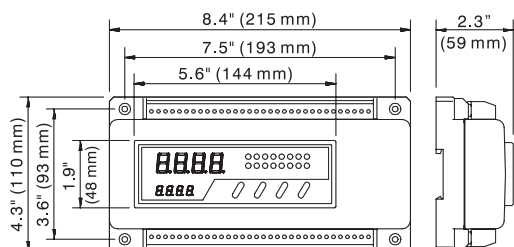
- Stand-alone data acquisition system
- Data acquisition with directly-plugged Centronics printer
- Data acquisition and control terminal for PLC
- Data acquisition and recording with PC
- Simple distributed control, PC managed
- Substitute for a control cabinet in small processes that require eight readings and/or alarm loops (or a quantity multiple of eight)

### INSTALLATION:

It can be used in the following ways:

- DIN rail mounting on cabinet bottom
- On electric normalized connection box (to house magnetothermic switches, for instance)
- Direct mounting in the field screwed on a wall or built-in
- On desktop for laboratory uses
- As a substitute for a control cabinet for small processes, which include 8 readings and/or alarm loops (or a multiple of 8)

## DIMENSIONS



Self-extinguishing thermoplastic housing  
 Module weight: 25 oz. (710 g)  
 Front terminal weight: 2.7 oz. (76 g)

## HOW TO ORDER

- **DAS-8000** Standard model includes software
- **DAS-8000/ND** Without front terminal