DATEXEL

A/D interface for PLC
4 inputs for V or mA

## DAT 6023

FEATURES
- **Analog Signal Acquisition on PLC digital I/O**
- **Analog Input to any PLC, even microPLC**
- **Isolated to eliminate Ground Loops**
- **16-bits resolution with high F.S. accuracy**
- **V or mA input**
- **Up to 4 analog inputs operation**
- **12.5 mm. thin profile housing**

APPLICATIONS
- **Factory Automation**
- **Building Automation**
- **Agricolture Automation**
- **Chemical Industry Measurement**
- **Security system**
- **. Machine Control**
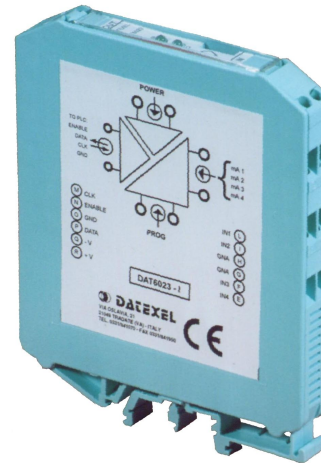
GENERAL INFORMATION

The DAT6000 series is an evolution in the connection techniques of the analog signals to the PLC.

The devices of this Serie perform many functions such as: amplification, linearization, isolation, filtering and conversion of analog signals coming from various types of sensors, in a high resolution digital signal. The digital signal is transfered to the PLC by a bus connected at any one of controller's digital inputs. It is composed by a series of 16-bit 'words' containing the values of the analog signals to be measured. The transfer is PLC controlled by a clock signal coming from one its output ports. The query of device is made supplying to it an enabling signal (ENABLE) and a clock signal (CLK). If the ENABLE is high, a bit composing the reading is provided on the output (DATA) at every clock pulse.

Few and simple instructions loaded into the PLC enable it to acquire up to two analog signals on a single digital input.

Every reading cycle is composed of 1 synchronism bit followed of a 16 bit word for each analog input signal (channel). So each reading is composed of 65 bits. The rising front of the ENABLE signal, handled by the controller, resets the reading cycle, avoidind the reading of unused channels. The Enable signal can be used also to "multiplexing" more devices to the same digital input of the PLC.

The DAT6023 module, designed, manufactured and tested in strict accordance with the quality assurance standard UNI EN ISO 9001/2000, is in compliance with the directive 89/336/EEC on the electromagnetic compatibility and the CE mark confirms its compliance. The device is housed in a rough self estinguishing plastic container which, thank to its thin profile of 12.5 mm only, allows a high density mounting on DIN rail.

TECHNICAL SPECIFICATIONS (Typical @25°C and in the nominal conditions)

ANALOG INPUT
Channels:	4 inputs for V or mA
Input type:	± 10 V and ± 20mA
Calibration Accuracy:	±0.05% F.S.
Linearity:	±0.1% F.S.
Input Impedance	> 1 MOhm for V ; 47 Ohm for mA
Thermal drift	±0.005 % F.S. /°C
Lead wire influence	< 0.8 uV/Ohm
Sampling rate	10 samp./sec
Band width	4 Hz

DIGITAL INTERFACE
Voltage on terminals:	24 Vdc typical (30 Vdc max.)
ON state:	>9 Vdc
Input impedence (ENABLE, CLK):	4.7 KOhm
Output's minimum load (DATA):	560 Ohm
Maximum Clock's signal frequency:	500 Hz
Rise time (Tr)	<0.2 ms

SUPPLY
Supply voltage	18 ÷ 30 Vdc
Supply current	35 mA @ 24 Vdc
Reverse polarity protection	60 Vdc max.
3-way isolation	2000 Vac, 50 Hz, 1 min.
Electromagnetic Compatibility (EMC)	In compliance with EN50081-2 and EN50082-2
Operating temperature	- 10 ÷ 60 °C
Storage temperature	- 40 ÷ 85 °C
Relative humidity (not condensing)	0 ÷ 90 %
Dimensions (W x H x T) in mm.	90 x 98 x 12.5 mm
Weight	50 g. approx.

INPUT TYPES AND RANGES

| Voltage			Current		
Input	Min	Max	Input	Min	Max
10 V	-10 V	+10 V	20 mA	-20 mA	+20 mA

OPERATING INSTRUCTIONS

To put the device in operation it is necessary to make the wiring of power supply, analog input and the digital output to the controller as indicated in the "BLOCK DIAGRAM" hereafter illustrated.
All the inputs have the same configuration. Consequently the input signals must be of the same type.
The CLK signal digital filter can be set to 1ms or 10ms (half-period duration) by a dip-switch (SW4).
The above described setting must be defined at the order phase, getting a module already set to work.
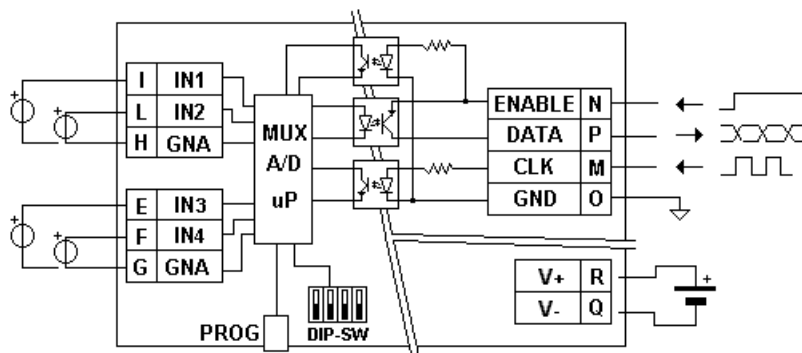
DATA READING
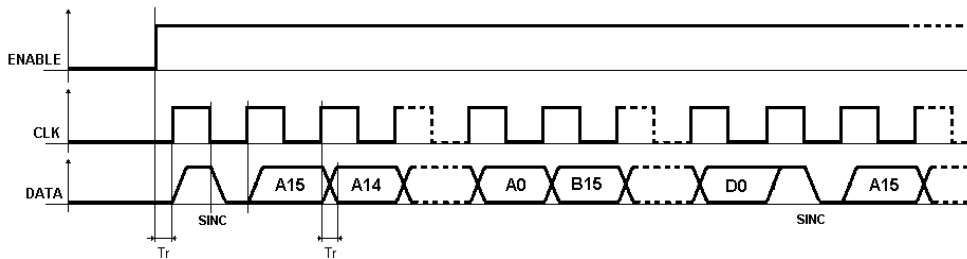
DIP-SWITCH CONFIGURATION

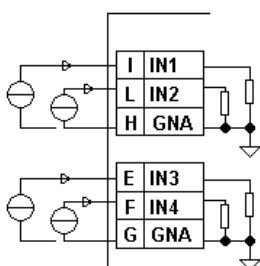| SW4	Digital Filter (CLK)
0	1 ms (500 Hz)
1	10 ms (50 Hz)

BLOCK DIAGRAM
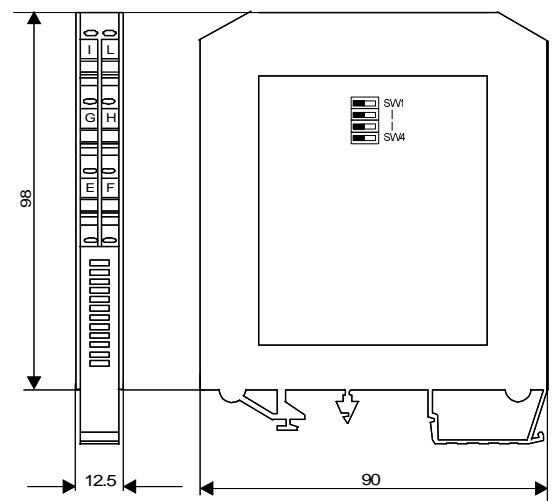
V wiring

mA wiring

MECHANICAL DIMENSIONS (mm.)

HOW TO ORDER:

DAT 6023 - mA - 1ms

Input type
Digital filter

EDIT.09.03-REV.02

Datexel reserves its right to modify the characteristics of its products totally or in part without warning at any time.