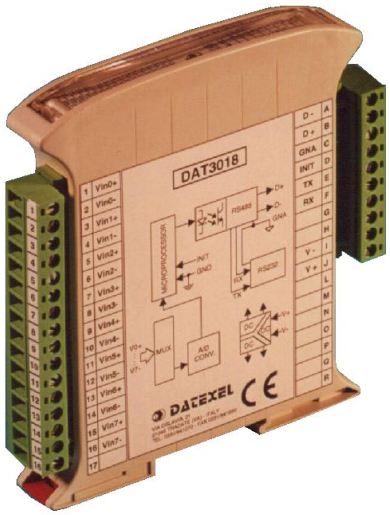
Remotable 8 analog V or mA inputs smart conditioner with RS-485 or RS-232 communication port

DAT 3017

FEATURES
Sensor-to-computer interface
for remote data acquisition
8 inputs for V or mA
Input signal configurable from remote host computer
Communication on RS-485 or RS-232 line
2000Vac 3-way galvanic isolation
In compliance with EMC standards - CE mark
17.5 mm. thin profilehousing
DIN rail mounting

APPLICATIONS
- **Network data acquisition & control**
- **Industrial process monitoring**
- **Factory & building automation**
- **Distributed measurement & control**



GENERAL INFORMATION

DAT3017 signal conditioner converts the analog input signal to engineering units and transmits the data in ASCII format to the remote terminal through the RS-485 port. It is able to handle Voltage (up to 10Vdc) or Current (up to 20mA) input signals and it is configured from the remote host by sending the configuration data on the serial line RS-485. The input signals which can be handled are listed in the apposite table illustrated in the following page.There are availables two different protocols: the **standard ASCII** based protocol, composed by short, simple and intuitive commands, wich allows a fast development of the plant management software with simple languages like VisualBasic, C, Delphi. The command set is compatible with similar devices available on the market. The **MODBUS (RTU or ASCII)** protocol, known as a spread standard in Field-Bus, is useful for efficient and reliable management of a plant with great quantity of variables. Thank to this standard, it is possible to directly interface DAT3000 series to the larger part of PLCs and SCADA applications available on the market, with the possibility to connect on the same net DAT3000 devices with other different devices (PLC. Operator Panels, CNC, etc...).
The device is built around a microprocessor core which, over the various tasks performed, has the management of a 16bit A/D converter , connected to a 8 channel MUX,which is dedicated to the acquisition of the input signal with the needed accuracy. With the purpose to assure safe operation of the system, the module has two watchdogs which, in case of failure, can activate an alarm and can force the outputs in a safe condition. 3-way galvanically isolation between input, output and power supply is obtained by means of photocouplers and transformers in such a way to guarantee a 2000Vac isolation. The 8 input channel are not isolated between them. The management of the device and the message exchange with it are performed through simple commands sent to its communication port.
The DAT3017 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 17.5 mm only, allows a high density mounting on DIN rail.

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

INPUT & OUTPUT

Input impedance	>100 KOhm for Voltage; <=50 Ohm for current
Lead wire resistance influence	< 0.8 uV/Ohm

CHARACTERISTICS & PERFORMANCES

Linearity error	+/-0.1 % of F.S.
Calibration error	+/-0.05% of F.S.
Thermal drift	+/-0.005%/°C
Reverse polarity protection	60 Vdc max.
Sampling frequency	10 sampl/sec
Bandwidth	4 Hz
Supply voltage	10÷ 30 Vdc
Current consumption	</= 35 mA @ 24 Vdc
3-way isolation	2000 Vac, 50 Hz, 1 min.
Warm up time	3 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.	100 x 120 x 17,5
Weight	100 g. approx.

INPUT TYPE AND RANGES

Voltage		
Input	Min	Max
+/-10 V	-10 V	+ 10 V

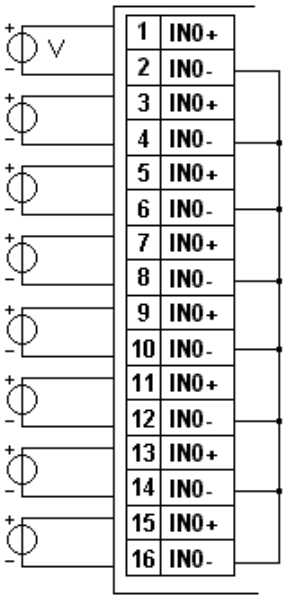
Current		
Input	Min	Max
+/- 20 mA	- 20 mA	+ 20 mA

OPERATING INSTRUCTIONS

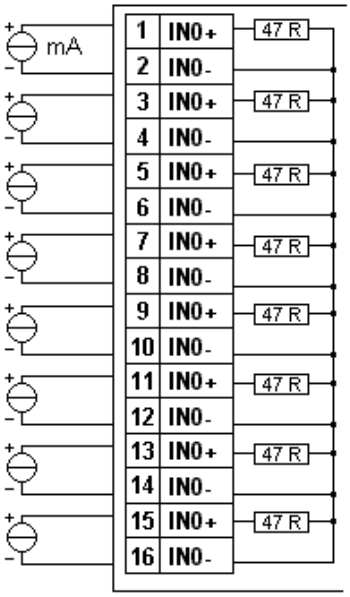
To put the device in operation it is necessary to make the wiring of power supply, inputs, serial line and digital I/O , as indicated in the "BLOCK DIAGRAM" hereafter illustrated. Then it is necessary to proceed to its configuration following the instructions listed in the "User Manual".
The various phases through which such procedure is performed are fundamentally the followings: set up of the data; set up of the timer watchdog; set up of the alarms; calibration if it is necessary. Then the module is ready for operation.
Please note that the use of pin INIT allows to start up the module, when its address and baud rate are not known,following the default settings listed in the "User manual".

WIRING DIAGRAM

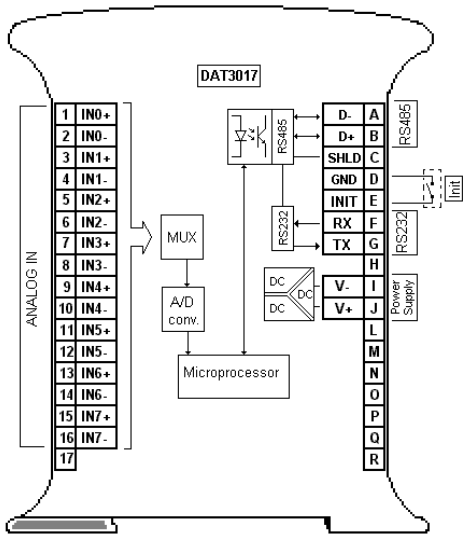
Voltage



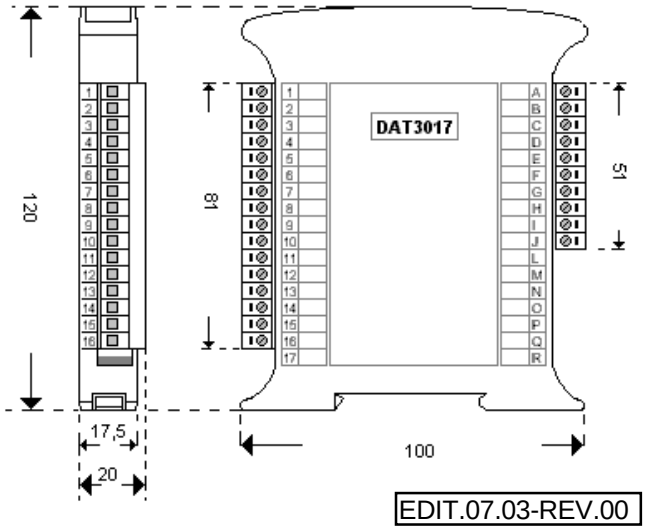
Current



BLOCK DIAGRAM



MECHANICAL DIMENSIONS (mm.)



HOW TO ORDER:

DAT 3017 - □ - □ □

- "485" = RS-485 comunication
- "232" = RS-232 communication
- "A" = ASCII protocol
- "M" = MODBUS protocol
- "V" = Voltage Inputs
- "mA" = Current Inputs

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