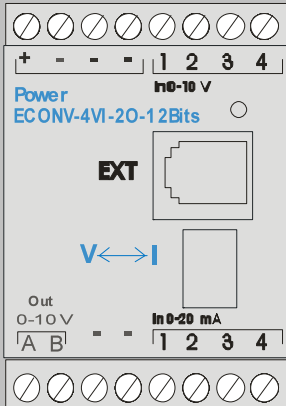


ECONV-4I-20-12Bits



ECONV-4I-20-12Bits

User Reference 1.1

Analog Input/Output Module Expansion

PRELIMINARY

Description: ECONV-4I-20 Analog I/O module expansion

Publication : 1.11 (Rev 1)

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User Reference v1.1

Analog Module E.CONV-4I-20-12Bits:

About this Manual

Please read through this manual carefully before beginning with the installation. The ECONV-4I-20-12Bits module is designed to be a low cost, versatile industrial module that is quick and easy to install and can be operated also as stand alone module.

Installation Instructions

- When installing the ECONV-4I-20-12Bits, take the environmental conditions into account under which the device normally operates.
- Do not install the ECONV-4I-20-12Bits in areas which are subject to excessive dust, oil mist, conductive dust or corrosive gas.
- Do not install directly in areas which are subject to shock or vibrations
- Do not install in areas which are subject to high temperatures, direct sun irradiation, humidity or rain.
- Do not install near high-voltage devices or power lines.

Caution

- Ensure that no wire pieces, fillings or shavings fall into the device when holes are drilled or wires connected.
- Do not mount the ECONV-4I-20-12Bits directly above a heat-generating source, such as a heater, a current transformer or a high-wattage resistor.
- 3 Pin assignment of the communication interfaces (Ext/Com). The communication and extension interface of the IPC FEC-Standard operate with a TTL level (5 V). Only use the respective accessories offered (SM14 NAC cables).

Features:

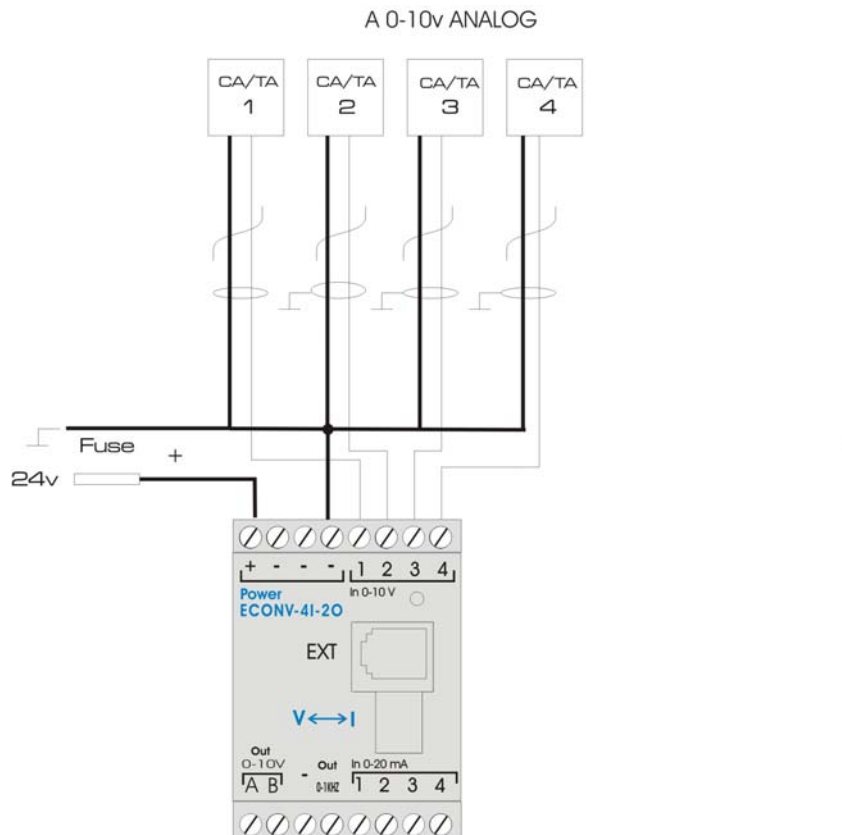
- 4 analog input channel for FEC Compact and Standard (up to 12 bits)
- 2 analog output 0-10 V (8Bits)
- Single power supply of 24Vcc.
- Voltage or current input selection via easy accessible dip switches.
- Stand alone operation via SM14 Nac to PC serial port.

This input module is capable to add 4 input analog signal 0-10v or 0-20mA to FEC Compact or FEC Standard using the a communication TTL port, like the COM or EXT port.

Schematic Connection:

Each analog input have a common analog Ground AGND . Power GND and AGND are internally connected

Example using all input as 0-10v analog input.:



All input can be selected as voltage or analog input via switch locates in front of module.

NOTE: The input resistance of each input channel is 30K ohms when the channel is selected as voltage input. If channel is selected as current input the input resistance is 250 ohm. Do not leave the circuit connection of voltage and current in the same channel at the same time, that is, use each channel only as voltage and this associate circuit or use the channel as current with this associate circuit.

EXT interface expansion:

The Fec module has an extension interface via which the FEC modules can be connected to external world, for example with a remote expansion device. The FEC-EXT interface works using TTL Levels (0-5V). In order to connect an ECONV-4I-20 as a remote expansion you require a FEC KSD4 cable. Since both stations are connected via a TTL interface, this may only be implemented using a short cable, less than 30 cm. If cable is any longer, reliable operation of the connection is not guaranteed. The format of communication is 9600,8,n,1.

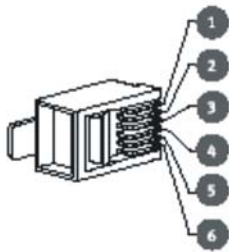
That is:

Bauds: 9600
Data: 8 bits
Parity: No
Stop Bits: 1
Flow Control: Nothing

that is the default speed of EXT port.

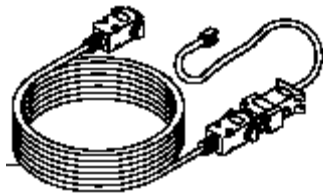
Please remember that the interface produces TTL signals and is NOT galvanically separated. The analog inputs also are NOT galvanically insulated.

Pin assignment of EXT PORT interface:



Pin no.	Signal name
1	+5V
2	GND
3	TXD
4	RXD
5	CTS
6	RTS

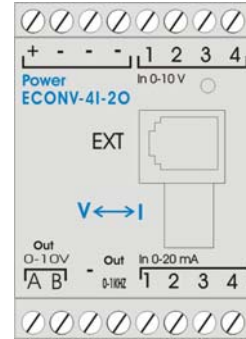
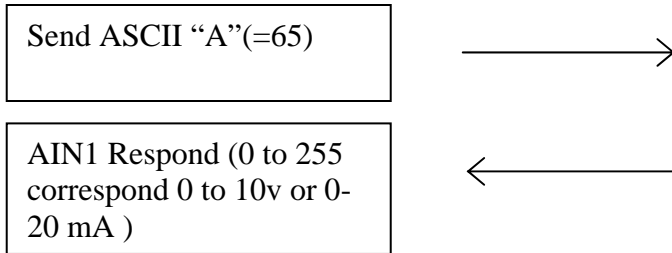
SM 14 Cable:



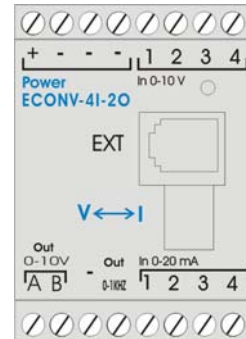
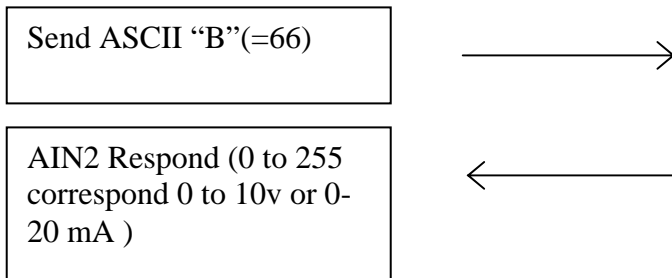
Data format:

The format of communication is as follow:

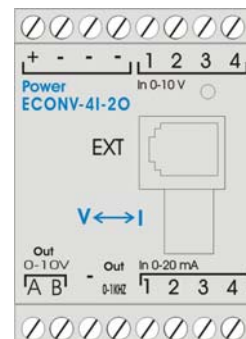
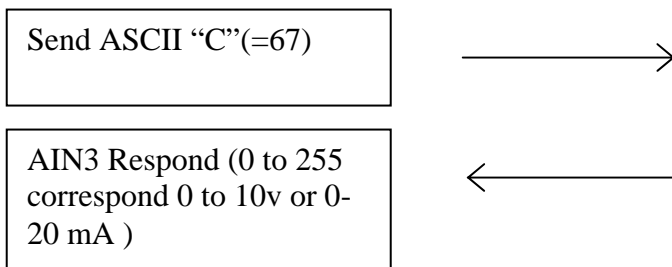
Access to analog input 1:



Access to analog input 2:

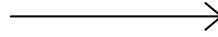


Access to analog input 3:

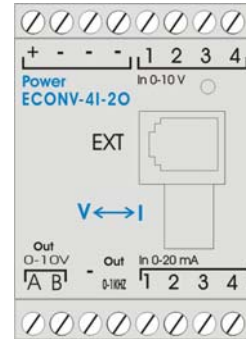
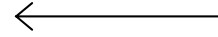


Access to analog input 4:

Send ASCII "D" (=68)



AIN4 Respond (0 to 255 correspond 0 to 10v or 0-20mA)



Analog Output:

The ECONV-4I-20-12Bits have 2 analog output 0-10V with 8 bit resolution.

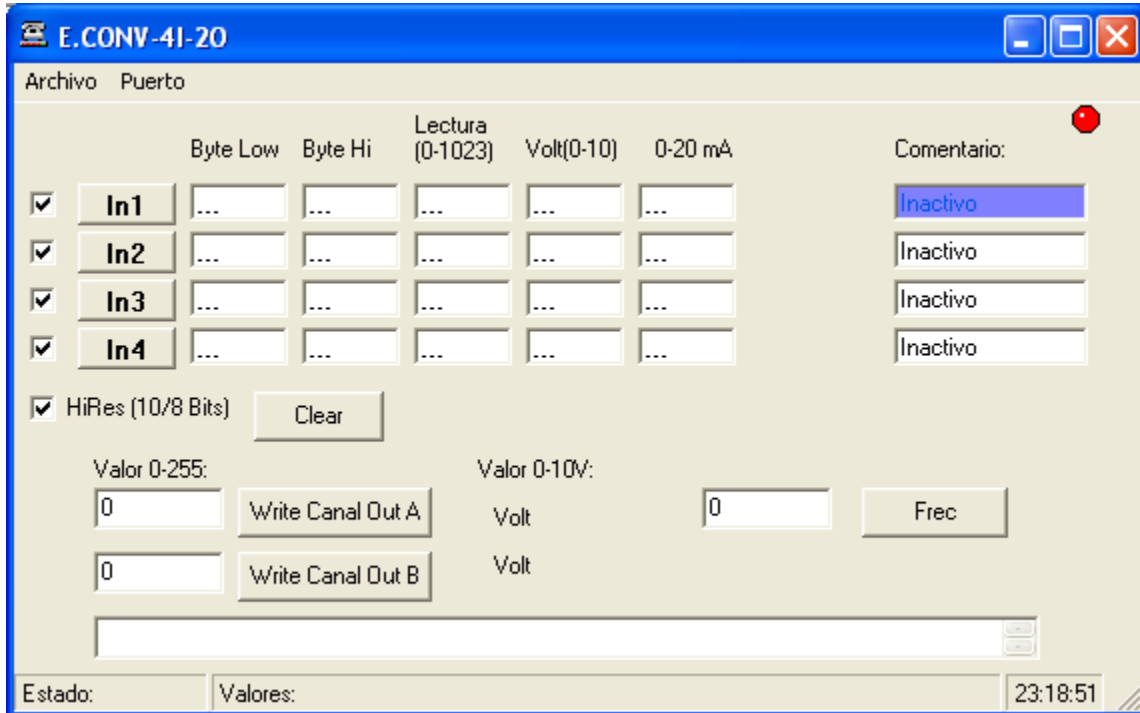
For channel A is necessary send a ASCII "F" and next send a value in a range 0-255 corresponding 0-10V output.

For channel B is necessary send a ASCII "G" and next send a value in a range 0-255 corresponding 0-10V output.

Stand Alone Operation via SM14 (or Sm14 NAC) to PC serial Port.

Is possible to connect directly the ECONV-4I-20-12Bits to a PC serial port. The ECONV-4I-20-12Bits have all necessary hardware to realize this connection. Simply plug the RJ11 of the SM14 NAC cable into the ECONV-4I-20-12Bits and the other DB9 female connector to a PC serial port. With ECONV.exe software is possible to read all channel and display it on screen of the PC.

ECONV.EXE Interface SoftWare:



Example of driver communication for FEC module with FST4:

The first thing to do, is insert COMEXT and FOEXT into the driver configuration and then insert the following CFM: PUTCOM.GETCOM and OPENCCOM. This is necessary to perform data communication via serial port.

The program1 is the main program. In the first step, we activate P2 that act as drivers for fill de analog input into registers.

The screenshot shows the FST - FECANA3 (IO analogicas) - FEC Compact software interface. The Project Tree on the left shows the following structure:

- Project Settings
- Project Documentation
- Allocation List
- Programs
 - Program 0 (V1) - Main
 - Program 2 (V1) - GetData
- CMPs
- CFMs
 - CFM 0 (V1) - PUTCOM
 - CFM 1 (V1) - GETCOM
 - CFM 2 (V1) - Opencom
- Controller Settings
- IO Configuration
- Driver Configuration

The main window displays the assembly code for 'Program 0 (V1) - Main':

```
STEP ini
IF
THEN SET          NOP
                P2

STEP Main
"" Here put your program ""
IF
THEN
THEN
""*****""

STEP 3
IF
THEN JMP TO main
```

The 'Driver Configuration' dialog box is open, showing the following table:

Name	Number	Uses	Description
COMEXT	8	-	Serial Communication
FOSEXT	108	-	FOSSIL Support for the EXT Interface

