



DLC 1200SG



USER MANUAL



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1 HARDWARE CHARACTERISTICS

This chapter describes the hardware characteristics of “DLC_1200SG” :

1.1 Electric Characteristics

| ELECTRIC CHARACTERISTICS | |
|--------------------------------|---|
| Power supply voltage | 24 Vdc +/- 10 % |
| Maximum Permitted Power Supply | 27 Vdc |
| Current Consumption | Under 50 mA without loads [Power Supply = 24 Vdc] |
| Microprocessor | Hitachi H8 |
| Digital Inputs | 4 fast inputs for 2 bi-directional encoder |
| Analog Inputs | 1 analog input for strain gauge 16 Bit |
| Digital Outputs | x |
| Analog Outputs | x |
| Serial Lines | 1 Serial Line : RS 485 Supports the communication protocols : KERNEL, KNP and MODBUS RTU |
| Leds | 2 red leds for communication signalling |
| Addressing | 8 Dip-switches (of which only 5 for the addressing from 1 to 31) |

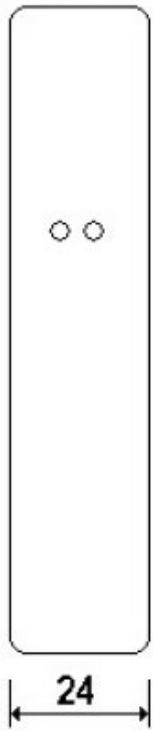
1.2 Mechanics Characteristics

| MECHANICS CHARACTERISTICS | |
|---------------------------|------------------------------------|
| Temperature Range | From -10 ^C to +70^C |
| Humidity Range | From 10 % to 90 % (non-condensing) |
| Operating Atmosphere | Without corrosive gas |
| Noise Immunity | According to rules in force |
| Fixing System | On din rail |
| Weight | 130 g |
| Keyboard | No Keyboard |
| Display | No Display |

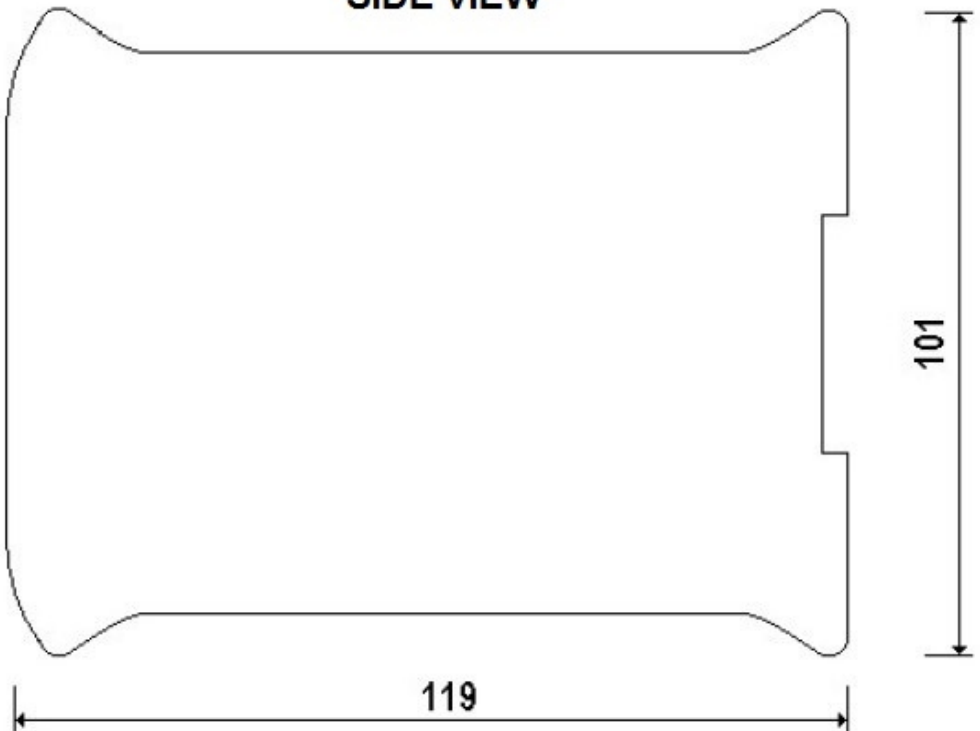
1.3 Dimensions

Front View 24x101 ; Depth 119 mm

FRONT VIEW

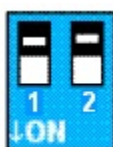


SIDE VIEW

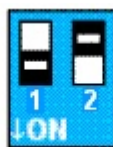


1.4 Strain gauge resolution

Is possible change the strain gauge resolution (in according to the model) with the two dedicated dip-switches, look following image :



4mV/V

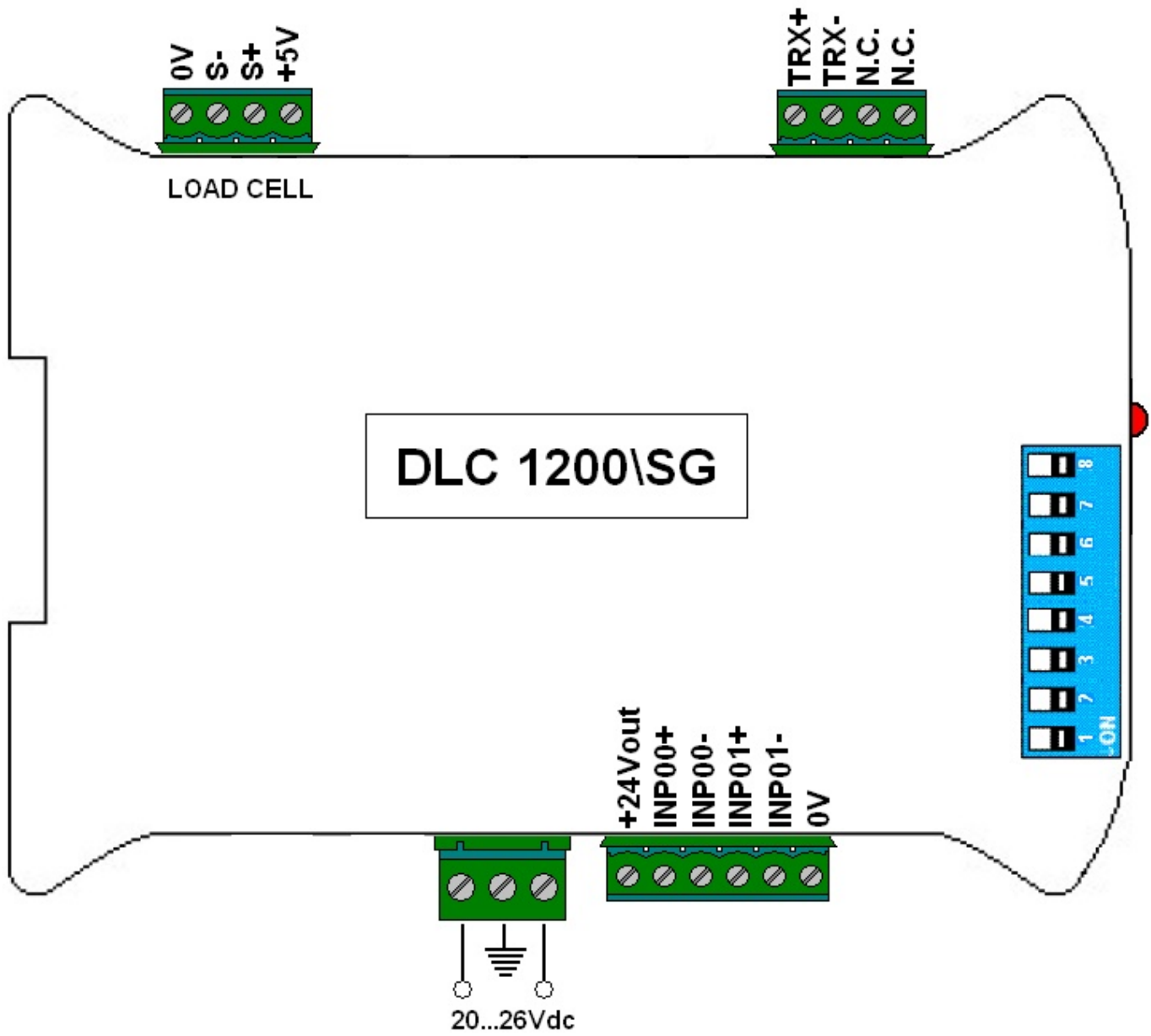


2mV/V



1mV/V

1.5 I/O Connections

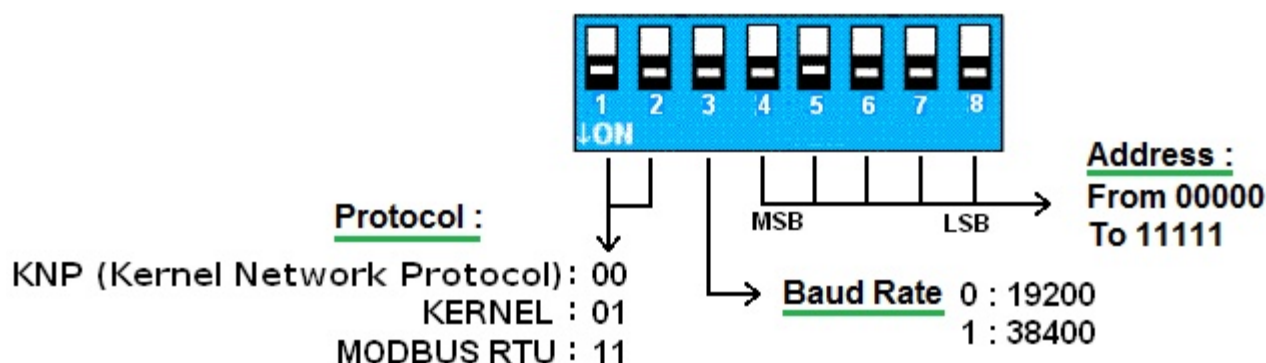


2 GENERAL NOTES

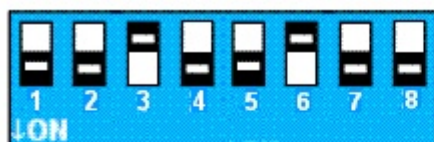
In order to have a correct and complete picture on the use of DLC_1200SG and how to work with this object, it is appropriate to give some general information. The DLC_1200SG is an expansion module, that can be connected to Kernel devices, whose main characteristic is that they have 1 analog strain gauge input at 16 bits. Moreover, thanks to an addressing system to 5 bit you can give to each expansion node address from 1 to 31.

2.1 DIP-SWITCHES

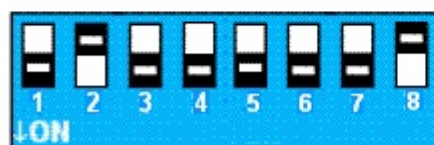
You can configure for each DLC_1200SG its own node address, baud rate and protocol, through the 8 suitable dip-switches (see hardware characteristics and the following figure).



Here are some examples that help to understand :



Proto: KNP Addr: 4
Baud rate: 38400

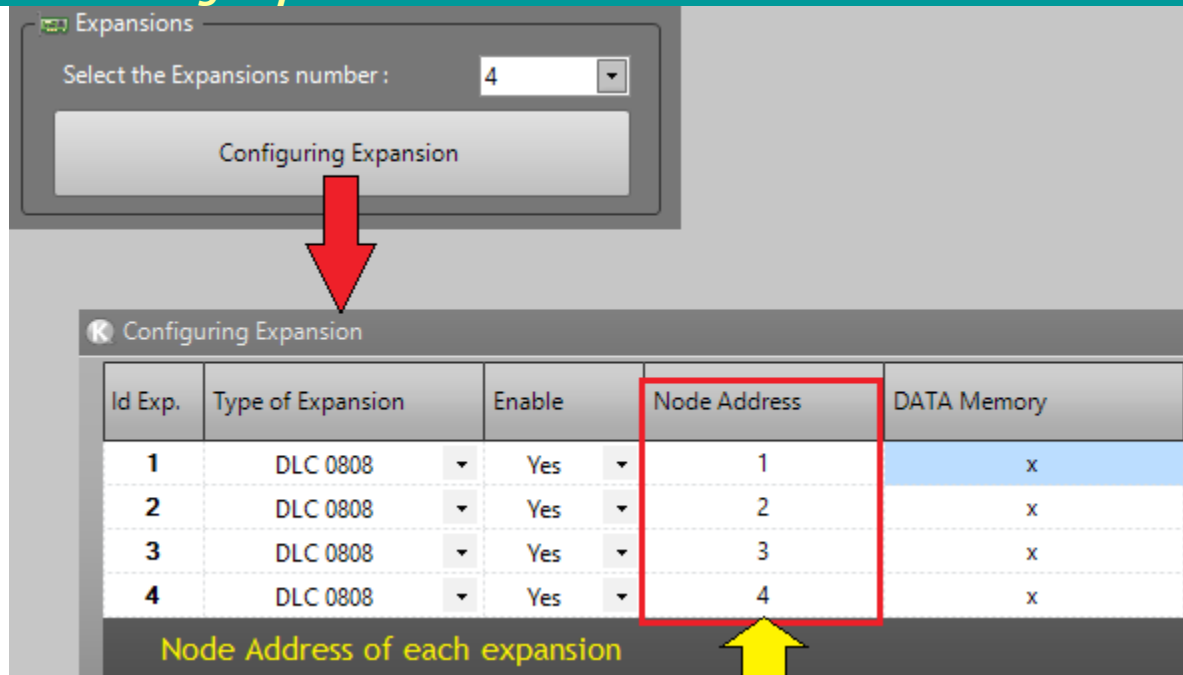


Proto: KERNEL Addr: 1
Baud rate: 19200

In the application program of the PLC of the Kernel Sistemi you need to set the NUMBER and the TYPE of EXPANSIONS that are connected. To do this it's necessary to open the project and go into the menu "Project Options" >> table "Serial" to set the number of expansions; click on the button "Configuring Expansion" to choose the type of expansions connected.

With the KNP protocol you can insert in the network different types of Kernel Sistemi expansions.

IMPORTANT : the node address of each expansion set with the dip-switch must MATCH the one assigned automatically by the application program of the PLC of the Kernel Sistemi [see figure below] :



2.2 Communication

The serial communication occurs only via RS 485. It will be necessary to set the protocol **KNP_MASTER 19200, N, 8, 1**, on the PLC Kernel Sistemi.

With the dip-switches 1 and 2 you select the COMMUNICATION PROTOCOL and with the dip-switch 3 you choose the BAUD RATE; according to the protocol set with the dip-switches, you need to select the corresponding protocol (within the PLC project) in the COM used between PLC and expansions. Also in this case it's necessary to open the PLC project and go to the menu "Project Options" >> table "Serial" to select the correct protocol :

DIP-SWITCH 1 e 2 - Project Options >> "Serials" of the PLC project

- 00 = KNP (Kernel Network Protocol) - KNP MASTER
- 01 = KERNEL Protocol - KERNEL
- 11 = MODBUS RTU Protocol - RTU MASTER

Also the Baud Rate set with the dip-switch must obviously coincide with the one selected in the "Project Options" >> table "Serial" in the COM used between PLC and expansions.

3 Memory Map

Currently the DLC1200SG has two 16 bit (1 WORD) memory location called DATA which allow to read the current strain gauge value.

| Operand | Description | |
|-----------------------------|--|----|
| DATA.01 (Modbus - 40001) | Strain gauge value INSTANT 16 Bit Value | RO |
| DATA.02 (Modbus - 40002) | Strain gauge value AVERAGE 16 Bit Value | RO |

| Comment | Icon |
|----------------|------|
| Read Only DATA | RO |

4 CONTACTS

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