DLC 0808

USER MANUAL

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1 HARDWARE CHARACTERISTICS

This chapter describes the hardware characteristics of "DLC_0808" :

1.1 Electric Characteristics

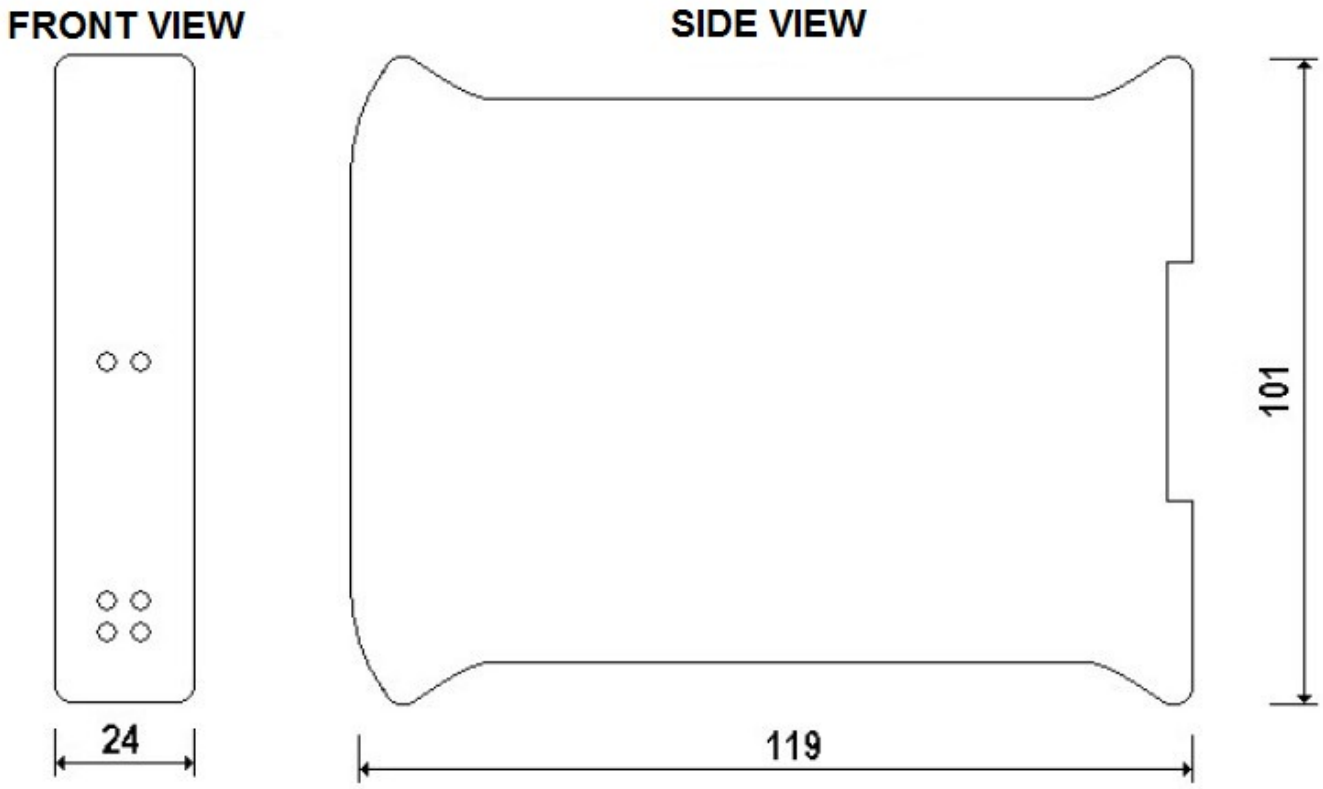
ELECTRIC CHARACTERISTICS	
Power supply voltage	**24** Vdc +/- 10 %
Maximum Permitted Power Supply	**27** Vdc
Current Consumption	Under **50** mA without loads [Power Supply = 24 Vdc]
Microprocessor	**Hitachi H8**
Digital Inputs	**8** digital inputs PNP 24 V
Analog Inputs	**x**
Digital Outputs	**8** static digital outputs PNP 24Vdc at 500 mA
Analog Outputs	**x**
Serial Lines	**1** Serial : RS 422 or RS 485 Supports the communication protocols : KERNEL (Standard) or KNP ("D")
Leds	**8** green leds, one for each digital input **2** red leds, for signalling the transmission and reception of data from serial **8** yellow leds, one for each digital output
Addressing	**2** Dip-switches

1.2 Mechanics Characteristics

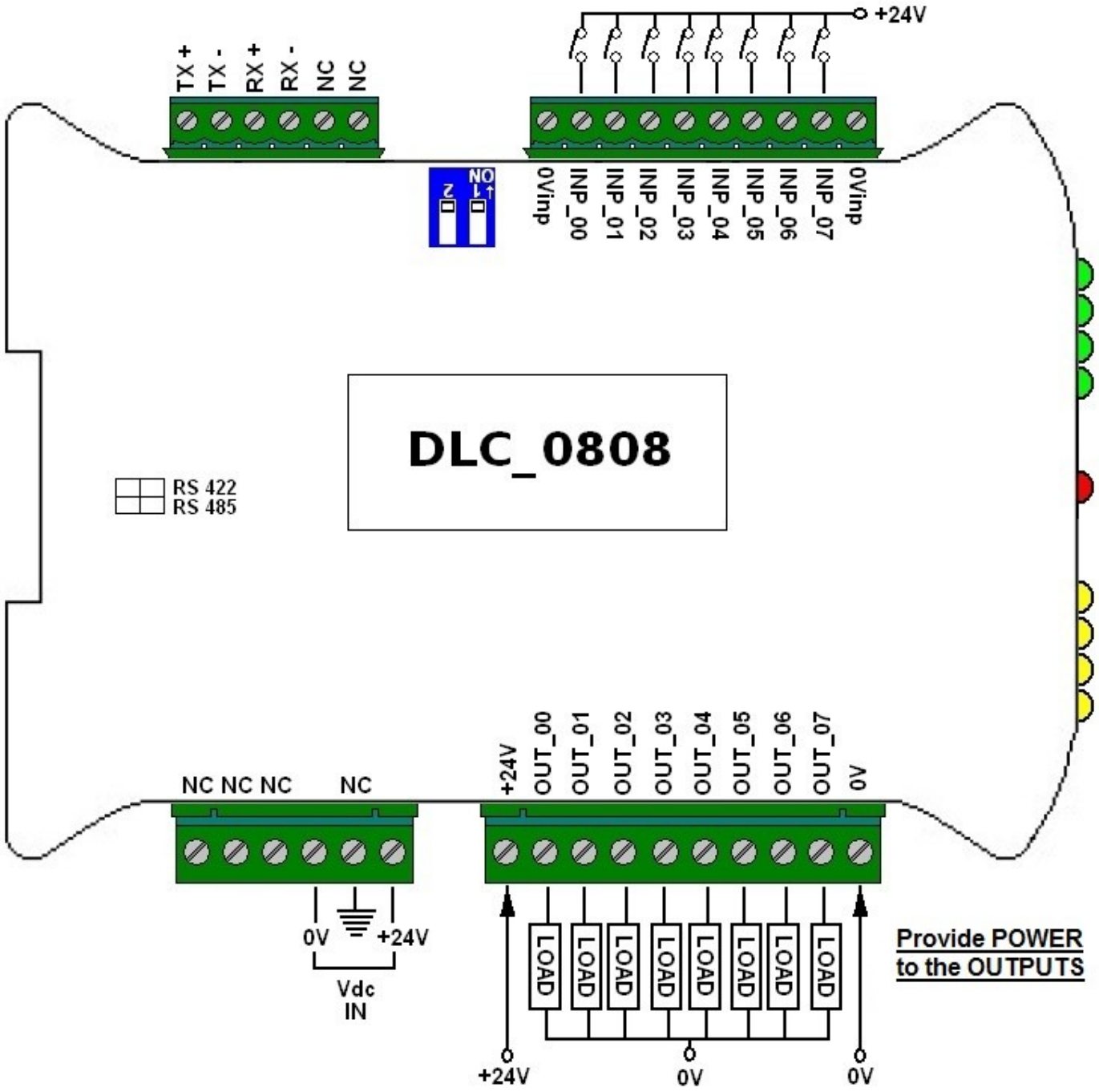
MECHANICS CHARACTERISTICS	
Temperature Range	From -10 ^C to +70^C
Humidity Range	From 10 % to 90 % (non-condensing)
Operating Atmosphere	Without corrosive gas
Noise Immunity	According to rules in force
Fixing System	On din rail
Weight	150 g
Keyboard	No Keyboard
Display	No Display

1.3 Dimensions

Front View 24x101 ; Depth 119 mm



1.4 I/O Connections



2 GENERAL NOTES

In order to have a correct and complete picture on the use of DLC_080G and how to work with this object, it's appropriate to give some general information. The DLC_0808 is a digital expansion module can be connected to Kernel devices; every single module mounts 8 digital I/O (static outputs) and correctly configuring the application on the PLC and the addresses of the modules, it's possible to connect up to 3, this allows to have a maximum of 24 digital I/O in more than those which the PLC Kernel Sistemi used, mounts already on board. Once established by software the number of modules 0808 that you want to connect, the I/O of those modules will be processed by the PLC Kernel exactly as normal I/O onboard PLC.
There are 2 different types of firmware for these expansions: **the STANDARD (DLC_0808) and "D" (DLC_0808D)**.

"STANDARD" Operating System

The expansions with firmware "**STANDARD**" can be connected only to the COM_0 in RS_422 of PLC with Standard Operating System type that on COM_0 have set the **KERNEL** protocol [MASTER]; you can connect up to a maximum of 3 modules, and the COM_0 of the PLC will be dedicated to communication with these expansions and it will not be possible to connect other.

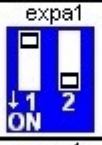
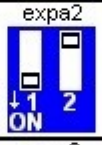
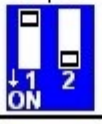
"D" Operating System

The expansions with firmware "**D**" can be connected only to the COM_0 on all STANDARD PLC; in all other will instead be possible to select the serial line you want. The operating system of the PLC must be of type "**D**". The connection must be in RS_485 and will use the protocol **KNP** (Kernel Network Protocol) which allows you to connect expansions of different type, then unlike the "**STANDARD**" system, with system "**D**" the serial will no longer be dedicated exclusively to the expansions 0808. It's possible to connect up to a maximum of four modules (maximum limit for hardware reasons)

2.1 DIP-SWITCHES

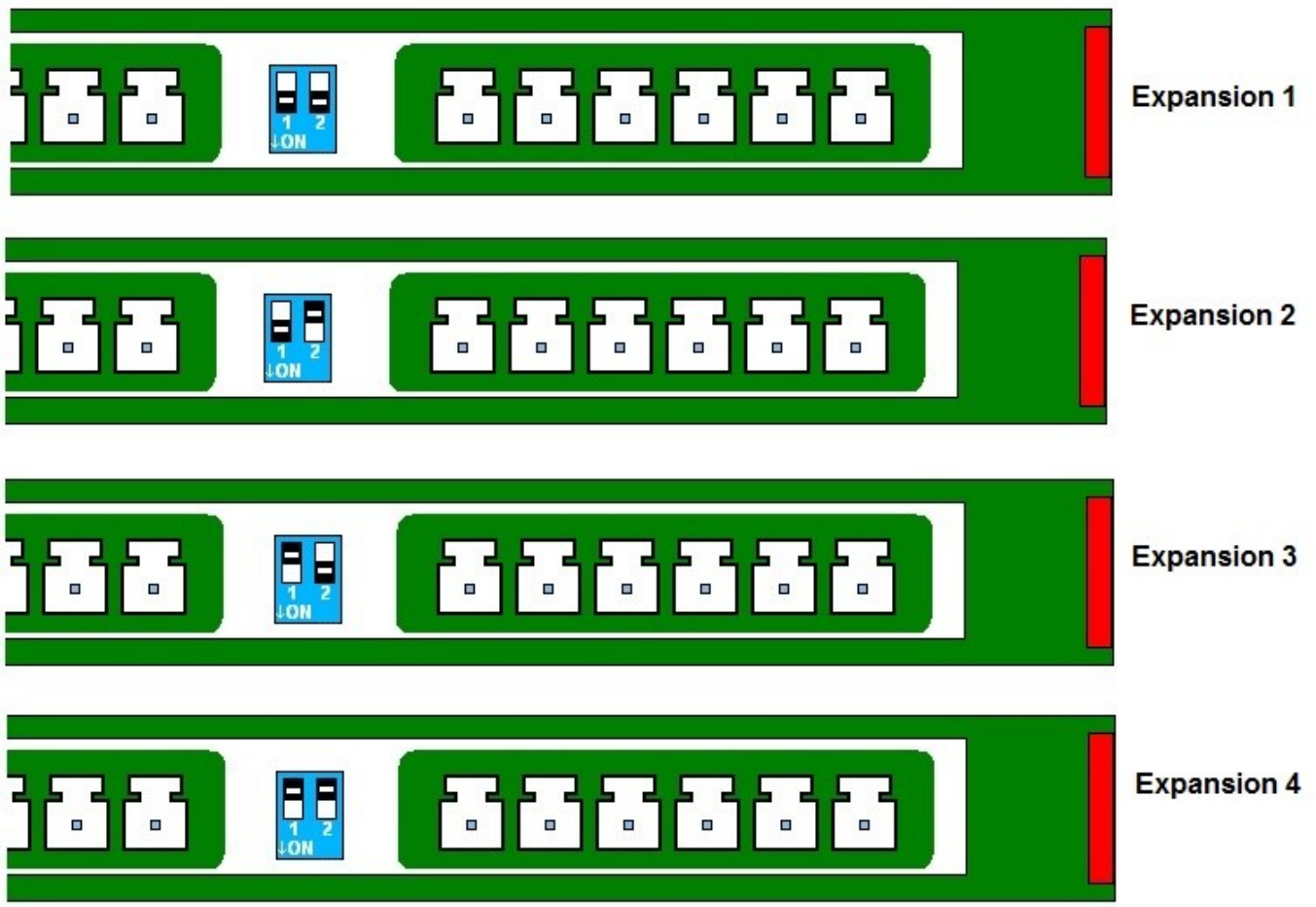
It's possible to give any DLC_0808 **"STANDARD"** type its own node address via the appropriate dip-switches (see hardware characteristics and the following figure), in this way it will be possible to connect to a PLC Kernel Sistemi a number of digital expansions 0808 from 1 to 3 (Standard) or 4 ("D"). You can select the number of expansions to be connected to the PLC, in the menu "Project Options" of the program for the PLC.

"STANDARD" Firmware

	Dip-Switches Position
With 1 Expansion Connected	
With 2 Expansions Connected	expa1  expa2 
With 3 Expansions Connected	expa1  expa2  expa3 

“D” Firmware

In the case the expansions DLC_0808 are of type "**D**", it will be possible to connect from 1 to 4. You can select the number of expansion type "D" to connect, in the menu "Project Options" of the program for the PLC.



2.2 Communication

As regards the communication between a Kernel Sistemi PLC and one or more digital expa type "**STANDARD**" there is no other set if not the correct number of expansions connected in the menu "Project Options" of the application program for the PLC.
The communication will always be of the type RS_422 and always occur on the COM_0 of the PLC of the Kernel Sistemi.

In the communication between the PLC of the Kernel Sistemi and one or more digital expa type "**D**" will be necessary to set the correct number of expansions connected in the menu "Project Options" of the application program to the PLC, and in the same menu you will have to specify in the table that it is "I/O Modules" (Flash) or "DLC_0808" (LogicPaint).
The communication will be of the type RS_485 and will always occur on COM_0 in standard PLC, otherwise the COM can be chosen.

2.3 I/O Management

Once you have entered the correct number of expansions in the menu "Project Options" of the application program for the Kernel Sistemi PLC which will be connected, will be available inputs and outputs the following :

```
1 expansion  connected : Inputs and Outputs from 32 to 39
2 expansions connected : Inputs and Outputs from 32 to 47
3 expansions connected : Inputs and Outputs from 32 to 55
```

In case the expansions are of type "D" will be possible to connect even a fourth :

```
4 expansions connected : Inputs and Outputs from 32 to 63
```

In the case in which the expansions aren't controlled by a PLC Kernel, but from any other device with the different protocol, to manage I/O, you will not be able to act on the INP / OUT from 32 forward; it will be necessary to act on the 16 bit DATA Memory 00 for inputs and 01 for the outputs. These are 2 WORD_WIDE DATA (16 Bit) and each bit corresponds an input or an output :
INPUTS :

DATA.00 = Will contain the status of INPUTS from 00 to 07

OUTPUTS :

DATA.01 = Will contain the status of OUTPUTS from 00 to 07

2.4 Time Active Communication

The expansion has a time called "Time Active Communication", i.e. a waiting time within which, if an output of the expansion is high and within the fixed time isn't received by the module another command that puts high that output, it's brought to zero. This system mainly represents a security, because in the case in which the expansion was connected to a PLC Kernel and for some reason the communication between the two devices is interrupted, the outputs of the expansion after a time "X" would be placed at 0. The PLC Kernel, therefore, sends in continuation a command strings to the outputs expansions.
In the case you want to send only once the string of ignition of the outputs, it will be necessary to go to exclude this time; to do this it's possible to manipulate this value within the DATA memory 16 of the expansion.
The DATA.16 has default value equal to 10, i.e. 1 second; it's possible to vary as desired, and placing this value to 0 will exclude the "Time Active Communication".

3 CONTACTS

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