

OPERATION MANUAL
FOR DISPLAYS OF SERIES
DN-109ND, DN-119ND and DN-129ND

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1. Introduction.

The numerical displays for series **DN-109ND**, **DN-119ND** and **DN-129ND**, are industrial displays for control by DeviceNet network. All of the units have the option of adding a symbol, in text format, of a maximum of three characters.

The selection of the parameters and the communication protocol is done using two buttons with a system of easily programmable codes.

One of its main characteristics is the large size of the characters,

DN-109ND of **57mm** legible at 30m.

DN-119ND of **100 mm** legible at 50m.

DN-129ND of **250 mm** legible at 100m.

As with other display series, the **DN-109ND**, **DN-119ND** and **DN-129ND** series is also available in **one or two-sided** versions, which provides multiple solutions and installation possibilities.

It is surface mounted, with fixtures to a wall or partition wall, or suspended by the side anchoring.

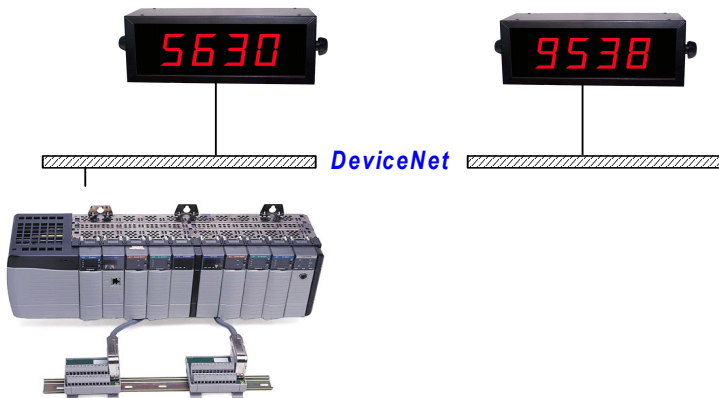
The application field of these displays is very wide in all types of industrial applications utilising the advantages of the DeviceNet network. They can be used to display Scada program values, counter values from a PLC.

The protection degree of equipments is IP41 but the following versions have IP65 protection degree.

DN-109eND Protection degree **IP65** and luminosity for indoor use.

DN-119eND Protection degree **IP65** and luminosity for indoor use

DN-119ehND Protection degree **IP65** and luminosity for outdoor use.



Available options :

- Protection IP65. (**e**) Applicable to models **DN-109** (57mm) and **DN-119** (100mm)
- Outdoor luminosity. (**h**). Applicable to models **DN-119** (100mm).
- Power supply 24VCC. Applicable to all models.
- Tricolor. Applicable to models **DN-109** and **DN-119**

Available models from 2(only **DN-129**) to 10 digits, in versions of 1 or 2 displaying sides (except 3 digits **DN-109** and **DN-119**).

Other models:

Within the visual display models **DN-109**, **DN-119** and **DN-129** there are manufactured other models for the following applications:

DN-109AP, DN-119AP and DN-129AP analog input for process. 0-10V and 0-20mA.

DN-109AT, DN-119AT and DN-129AT analog input for PT-100, thermocouples J, K, T.

DN-109P, DN-119P and DN-129P control by digital inputs with BCD control, counter, tachometer, chronometer and binary.

DN-109X, DN-119X and DN-129X control by serial line RS-232/RS-485.

DN-109NE, DN-119NE and DN-129NE control by Ethernet. TCP/IP and Modbus/TCP.

DN-109NP, DN-119NP and DN-129NP control by Profibus-DP network.

DN-109NW, DN-119NW and DN-129NW control by Wifi. TCP/IP and Modbus/TCP.

Option summary table.

	IP65	Outdoor luminosity	2 Sides	Color Option
DN-109	YES	NO	YES	YES
DN-119	YES	YES	YES	YES
DN-129	NO	YES	YES	NO

2. General characteristics.

2.1 Characteristics of the DN-109ND and DN-109eND displays.

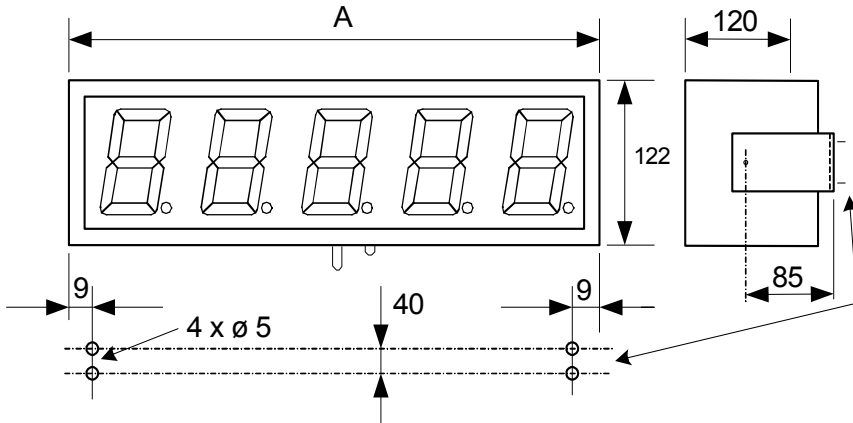
Supply Voltage	100 VAC to 240 VAC 50/60Hz
Option:	24V DC (19 - 36V)
Consumption	1 Side = (3 x No. of digits) VA.
.....	1 Side + Text = (3 x No. of digits) + 3VA
.....	2 Sides = (7 x No. of digits) VA.
.....	2 Sides + Text = (7 x No. of digits) + 7VA
Display	7 segments of 57mm in height + decimal point.
.....	Red Led colour. Visibility 30 metres.
Colour Option (C)	Colours Red, Green, Yellow.
Text	Formed by leds of a 5mm diameter with a character height of 50 mm.
Parameter memory	Eeprom.
Communication	DeviceNet slave
.....	Auto detection baud rate. Max.12MHz.
Data type	Integer, real or ASCII code
Environmental Conditions	Operation Temperature: 0 to 50°C.
.....	Storage temperature-10°C to 60°C
.....	Humidity 5-95% without condensation
.....	Maximum environmental illumination: 1000 lux.
DN-109ND	Protection IP41.
DN-109eND	Protection IP65

Summary table of characteristics

n = Number of digits	Protection	Colour	Number of sides
DN-109/nSND	IP-41	NO	1
DN-109/nDND	IP-41	NO	2
DN-109e/nSND	IP-65	NO	1
DN-109e/nDND	IP-65	NO	2
DN-109C/nSND	IP-41	YES	1
DN-109C/nDND	IP-41	YES	2
DN-109Ce/nSND	IP-65	YES	1
DN-109Ce/nDND	IP-65	YES	2

**Available models from 3 to 10 digits.
The 3 digits model is available only with 1 side.**

2.1.1 Dimensions of displays DN-109ND.



A according to digit's number

n (digits num.)	3	4	5	6	7	8	9	10
DN-109(C)(e)/SnND	210	288	288	336	382	430	478	526
DN-109(C)(e)/SnND+T	306	384	384	432	478	526	574	622
DN-109(C)(e)/DnND	----	288	288	336	382	430	478	526
DN-109(C)(e)/DnND+T	306	384	384	432	478	526	574	622

C=colour e= IP65

2.1.2 Weight of displays DN-109ND.

n (digits num.)	3	4	5	6	7	8	9	10
DN-109(C)(e)/SnND	2 kg	2 kg	3 kg	3 kg	3 kg	3 kg	4 kg	4 kg
DN-109(C)(e)/SnND+T	3 kg	3 kg	3 kg	4 kg	4 kg	4 kg	4 kg	4 kg
DN-109(C)(e)/DnND	----	2 kg	3 kg	3 kg	3 kg	3 kg	4 kg	4 kg
DN-109(C)(e)/DnND+T	3 kg	3 kg	3 kg	4 kg	4 kg	4 kg	5 kg	5 kg

C=colour e= IP65

2.3 Characteristics of the DN-119ND, DN-119eND and DN-119ehND

Supply Voltage	100 VAC to 240 VAC 50/60Hz
Option:	24V DC (19 - 36V)
Consumption	1 Side = (3.6 x No. of digits) VA.
.....	1 Side + Text = (3.6 x No. of digits) + 3.6VA
.....	2 Sides = (7.2 x No. of digits) VA.
.....	2 Sides + Text = (7.2 x No. of digits) + 7.2VA
Display	7 segments of 100mm in height + decimal point.
.....	Red Led colour. Visibility 50 metres.
Colour Option (C)	Colours Red, Green, Yellow.
Text	Formed by leds of a 5mm diameter with a character height of 65 mm.
Parameter memory	Eeprom.
Communication	DeviceNet slave
.....	Auto detection baud rate. Max.12MHz.
Data type	Integer, real or ASCII code
Environmental Conditions	Operation Temperature: 0 to 50°C.
.....	Storage temperature-10°C to 60°C
.....	Humidity 5-95% without condensation
DN-119ND and DN-119eND.....	Maximum environmental illumination: 1000 lux.
DN-119ehND.....	Maximum environmental illumination: Outdoor
DN-109ND	Protection IP41.
DN-109eND and DN-119ehND.....	Protection IP65

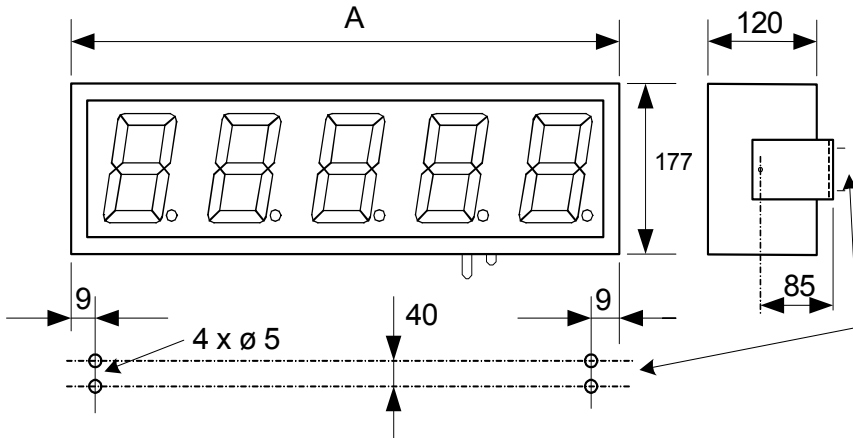
Summary table of characteristics

n = Number of digits	Protection	Colour	Number of sides
DN-119/nSND	IP-41	NO	1
DN-119/nDND	IP-41	NO	2
DN-119e(h)/nSND	IP-65	NO	1
DN-119e(h)/nDND	IP-65	NO	2
DN-119C/nSND	IP-41	YES	1
DN-119C/nDND	IP-41	YES	2
DN-119Ce(h)/nSND	IP-65	YES	1
DN-119Ce(h)/nDND	IP-65	YES	2

h=high luminosity

**Available models from 3 to 10 digits.
The 3 digits model is available only with 1 side.**

2.2.1 Dimensions of displays DN-119ND.



A according to digit's number

n (digits num.)	3	4	5	6	7	8	9	10
DN-119(C)(e)(h)/SnND	324	414	504	594	684	774	864	954
DN-119(C)(e)(h)/SnND+T	504	594	684	774	864	954	1044	1134
DN-119(C)(e)(h)/DnND	324	414	504	594	684	774	864	954
DN-119(C)(e)(h)/DnND+T	504	594	684	774	864	954	1044	1134

C=colour e=IP65 h=high luminosity

2.2.2 Weight of displays DN-119ND.

n (digits num.)	3	4	5	6	7	8	9	10
DN-119(C)(e)(h)/SnND	4 kg	4 kg	4,5 kg	4,5 kg	5 kg	5 kg	5,5 kg	5,5 kg
DN-119(C)(e)(h)/SnND+T	4,5 kg	4,5 kg	5 kg	5 kg	5,5 kg	5,5 kg	6 kg	6 kg
DN-119(C)(e)(h)/DnND	4 kg	4,5 kg	4,5 kg	5 kg	5,5 kg	5,5 kg	6,5 kg	6,5 kg
DN-119(C)(e)(h)/DnND+T	4,5 kg	4,5 kg	5 kg	5,5 kg	5,5 kg	6,5 kg	6,5 kg	6,5 kg

C=colour e=IP65 h=high luminosity

2.3 Characteristics of the DN-129ND displays.

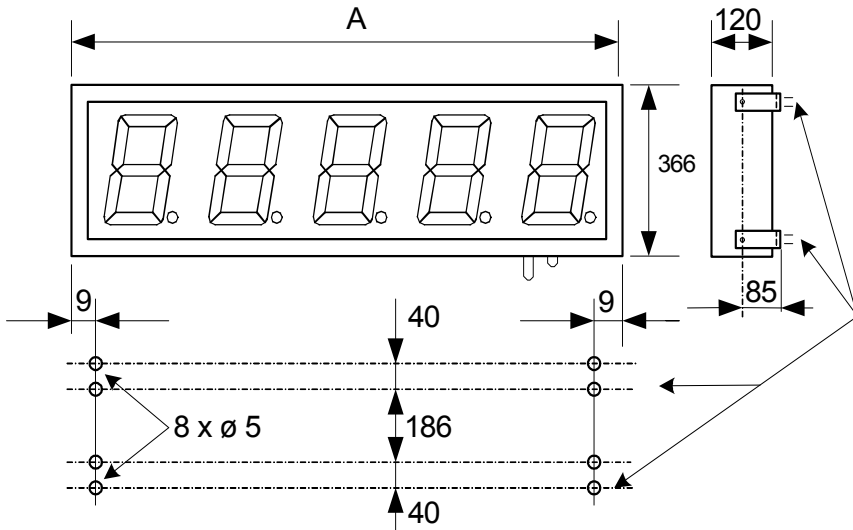
Supply Voltage	100 VAC to 240 VAC	50/60Hz
Option:	24V DC	(19 - 36V)
Consumption	1 Side = (7 x No. of digits) VA.	
.....	1 Side + Text = (7 x No. of digits) + 7VA	
.....	2 Sides = (14 x No. of digits) VA.	
.....	2 Sides + Text = (14 x No. of digits) + 14VA	
Display	7 segments of 250mm in height + decimal point.	
.....	Red Led colour. Visibility 100 metres.	
Text	In white vinyl	
Parameter memory	Eeprom.	
Communication	DeviceNet slave	
.....	Auto detection baud rate. Max.12MHz.	
Data type	Integer, real or ASCII code	
Environmental Conditions	Operation Temperature: 0 to 50°C.	
.....	Storage temperature -10°C to 60°C	
.....	Humidity 5-95% without condensation	
.....	Maximum environmental illumination: 1000 lux.	
.....	Protection IP41.	

Summary table of characteristics

n = Number of digits	Protection	Colour	Number of sides
DN-129/nSND	IP-41	NO	1
DN-129/nDND	IP-41	NO	2

Available models from 2 to 10 digits.

2.3.1 Dimensions of displays DN-129ND.



A according to digit's number

n (digit's num.)	2	3	4	5	6	7	8	9	10
DN-129/SnND	515	750	985	1220	1455	1690	1925	2160	2395
DN-129/SnND+T	985	1220	1455	1690	1925	2160	2395	2630	2865
DN-129/DnND	515	750	985	1220	1455	1690	1925	2160	2395
DN-129/DnND+T	985	1220	1455	1690	1925	2160	2395	2630	2865

2.3.2 Weight of displays DN-129ND.

n (digit's num.)	2	3	4	5	6	7	8	9	10
DN-129/SnND	7 kg	9 kg	10 kg	12 kg	14 kg	16 kg	17 kg	19 kg	21 kg
DN-129/SnND+T	10 kg	12 kg	14 kg	16 kg	17 kg	19 kg	21 kg	23 kg	25 kg
DN-129/DnND	8 kg	10 kg	13 kg	15 kg	18 kg	20 kg	22 kg	24 kg	27 kg
DN-129/DnND+T	13 kg	15 kg	18 kg	20 kg	22 kg	24 kg	27 kg	29 kg	31 kg

3. Installation.

The installation of the **DN-109ND**, **DN-119ND** and **DN-129ND** is not particularly delicate but some important considerations must be taken into account.

It must not be anchored to places subject to vibrations, nor should it be installed in places which generally surpass the limits specified in the display characteristics, both in terms of temperature and humidity.

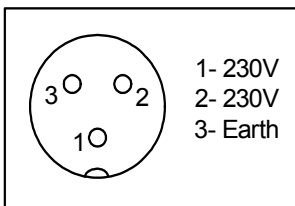
The degree of protection of displays **DN-109ND**, **DN-119ND** and **DN-129ND** is IP41, meaning that they are protected against penetration by solid foreign objects of a diameter of about 1mm and against the vertical fall of water droplets. The displays **DN-109eND**, **DN-119eND** and **DN-119ehND** have a protection degree IP65.

Displays **DN-109ND**, **DN-109eND**, **DN-119ND**, **DN-119eND** and **DN-129ND** should not be installed in places with an illumination level in excess of 1000 lux. Neither should the display be placed in direct sunlight as visibility would be lost. Display **DN-119ehND** may be placed in direct sunlight.

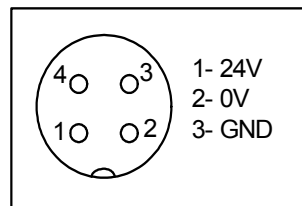
In the electrical installation, proximity to lines of high intensity circulation and high voltage lines must be avoided, as well as proximity to High Frequency generators and U/F converters for motors.

3.1 Power supply.

Power supply must be **100VAC to 240VAC**, **50/60 Hz** or optional **24VCC**. The protection fuse is **2A**.



3.1 Power supply 230VAC



3.2 Power supply 24V CC

The section of the power supply conductors is in keeping with the consume. The earth conductor must be minimum 1.5 mm².

The supply connector is located at the bottom of the equipment. The connection must be according to figure 3.1 for 230VAC and to figure 3.2 for 24VCC.

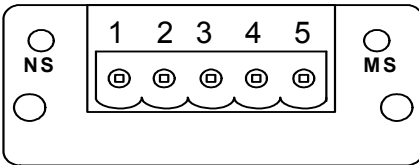
3.2 Connecting to the DeviceNet line.

DeviceNet line connection is carried out using a connector located in the lower part of the unit.

The terminal resistances will be enabled on the ends of the network to adjust network impedance.

Power lines that may generate electrical interference will be avoided where possible on the network layout.

Connector displays IP41



NS : Network status MS: Module status

Pin 1 = V- (GND)

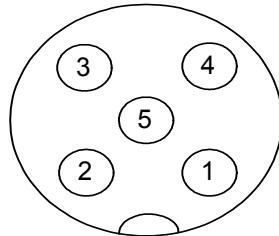
Pin 2 = CAN-L

Pin 3 = Shield

Pin 4 = CAN-H

Pin 5 = V+ (24V)

Connector displays IP65



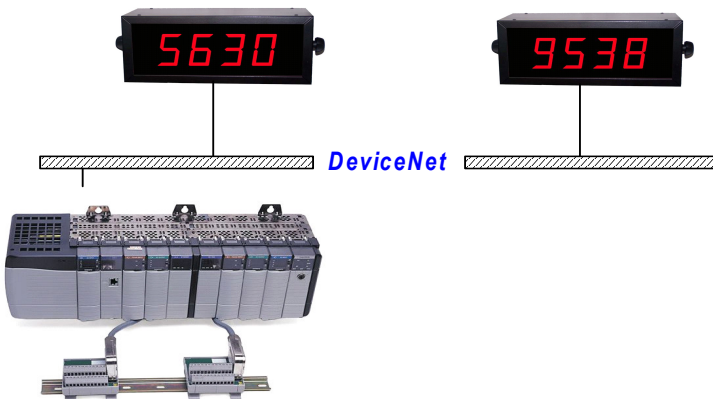
Pin 1 = Shield

Pin 2 = V+ (24V)

Pin 3 = V- (GND)

Pin 4 = CAN-H

Pin 5 = CAN-L



4. Operation.

4.1 Initial Start Up.

Before connecting the display to the network, we must ensure that all of the connections have been carried out correctly and that the display is firmly in place.

Each time we connect the display to the power supply network, an initial reset occurs which tests all of the segments comprising the display. The test consists of the sequential illumination of all of the digits with the number "8", all of the digits with the value "0", all of the decimal points are lit up and finally the version code.

When the DeviceNet module has been initialised correctly, the MS led will light up green. If the network is configured correctly and the display is connected to the network, the NS led will light up green.

From this point any one of the following three situations may occur:

- a) The display receives data from the Ethernet network and displays it.
- b) The display does not receive data and the time without data equals zero. Continues to show the decimal points.
- c) The display does not receive data and the time without data is not equal to zero. After a time without data it displays a dash in each digit.

4.2 Leds DeviceNet module.

The DeviceNet module has two leds to indicate the operation and status.

Led NS	Operation	Led MS	Status
Off	Not online / No power	Off	No power
Green	On line, one or more connections are established	Green	Operating in normal condition
Flashing green 1Hz	On line. No connections established	Flashing green	Missing or incomplete configuration
Red	Critical link failure		Unrecoverable fault
Flashing red 1Hz	One or more connections time-out	Red	Recoverable fault
Alternating Red/Green	Self test	Alternating Red/Green	Self test

In the equipments with IP65 protection degree leds aren't accessible. To know the status of DeviceNet module see **parameter 5**.

4.3 Programming the Parameters.

Displays **DN-109ND**, **DN-119ND** and **DN-129ND** can be adapted to the specifications of each client by the programming of parameters. The parameters which can be configured are:

- 1- Display address.
- 2- Data type.
- 3- Time without receiving data.
- 4- Decimal point position.
- 5- DeviceNet status
Only displays with colour option.
- 6- Define the internal bit r1.
- 7- Set up the trigger level of internal bit r1.
- 8- Define the internal bit r2.
- 9- Set up the trigger level of internal bit r2.
- nr- Colour if both internal bits are OFF.
- r1- Colour if internal bit r1 is ON.
- r2- Colour if internal bit r2 is ON.
- r3- Colour if both internal bits are ON.
- E- To exit modify parameters.

To program the parameters, the digits on the right of the display are used. The number of the parameter is indicated by the digit on the left and the decimal point flashes while the digit on the right is off.

4.3.1 Enter to modify parameters.

In order to enter the sequence to modify the parameters, the Advance key "7->5" must be pressed and held for three seconds. After this, the first parameters will be displayed, with the digit flashing.

There are then two options:

1- Modify the parameter value

By pressing the Advance key "7->5", entry is gained to modify the parameter value.

To go back to displaying the parameter number, press "7->5" again.

To increase the parameter value, press the "+" key. After parameter E it returns to 1.

2- Select another parameter

In order to select another parameter, the parameter number must be made to flash using the "7->5" key and then the new parameter may be selected using the "+" key.

4.3.2 Exit modify parameters.

In order to exit the sequence for modifying parameters, parameter E must be selected then press "7->5".

4.3.3 Function of each parameter.

4.3.3.1 Parameter 1: Display address in DeviceNet network.

Valid values from 00to 63.

4.3.3.2 Parameter 2: Data type.

Selects the data type used in the communication transfer.

Value	Data type
0	Decimal Integer
1	ASCII
2	Hexadecimal integer
3	Real

4.3.3.3 Parameter 3: Time without receiving data.

This parameter allows the programming of a time to warn that it is not receiving data or that the data is incorrect. The warning occurs if the programmed time is exceeded. Each time that a communication is received correctly, the time is reset to zero. The code "00" (No time) does not trigger any warning.

To indicate that the time limit has been exceeded, a dash will be displayed on each digit.

Code	Time	Code	Time	Code	Time
00	No time	08	26 s	15	20 min.
01	2 s	09	30 s	16	40 min.
02	4 s	10	40 s	17	1 hour
03	6 s	11	1 min.	18	2 hours
04	8 s	12	2 min.	19	5 hours
05	10 s	13	5 min.	20	10 hours
06	14 s	14	10 min.	21	25 hours
07	20 s				

4.3.3.4 Parameter 4: Decimal point position

To fix the decimal point position.

Type = Integer	Type = ASCII	Type = Real
0 = 000000	X	0 = Automatic
1 = 00000.0	X	1 = 000000.
2 = 0000.00	X	2 = 00000.0
3 = 000.000	X	3 = 0000.00
4 = 00.0000	X	4 = 000.000
.....	X

4.3.3.5 Parameter 5: DeviceNet status

To display the DeviceNet network status using the display digits.

Value = 0. Don't display the status.

Value = 1. Display the network status.

Displayed values.

-0- and -1- Initializing DeviceNet module.

-2- Module DeviceNet initialized. Waiting network operation.

When DeviceNet network is in operation status isn't displayed.

4.3.3.6 Parameter E: Exit parameter configuration

In order to exit parameter configuration, select parameter E and press the advance key "7->5".

Before to exit the parameter configuration the new data are saved in the Eeprom memory.

4.4 COLOUR OPTION.

The colour option allows you to modify automatically the display colour according to the present value. The possible colours are: Red, Green and Yellow.

In order to be able to manage the colour 2 internal bits are used, they change depending on display value. Eight parameters are needed to set up the levels. Four parameters are used to define the activation form and the activation level. The other four allow to define the colour according to a combination of the 2 internal bits.

4.4.1 Parameters to define the internal bit r1.

To set up the internal bit r1 parameters 6 and 7 are used.

Parameter 6 is used to set up the activation form and delay or hysteresis.

Parameter 7 is used to set up the trigger level. The most significant digit allow to set up a negative value.

PARAMETER 6

Left digit	Control bit	Right digit	Set/Reset
0	ON if Value > Parameter 7	0	No delay / No hysteresis
1	ON if Value < Parameter 7	1	Delay 1s
2	Always off	2	Delay 2s
		3	Delay 4s
		4	Delay 6s
		5	Delay 10s
		6	Hysteresis = 2
		7	Hysteresis = 4
		8	Hysteresis = 8
		9	Hysteresis = 12

4.4.2 Parameters to define the internal bit r2.

To set up the internal bit **r2** parameters **8** and **9** are used.

Parameter **8** is used to set up the activation form and delay or hysteresis.

Parameter **9** is used to set up the trigger level. The most significant digit allow to set up a negative value.

PARAMETER 8

Left digit	Control bit	Right digit	Set/Reset
0	ON if Value > Parameter 9	0	No delay / No hysteresis
1	ON if Value < Parameter 9	1	Delay 1s
2	Always off	2	Delay 2s
		3	Delay 4s
		4	Delay 6s
		5	Delay 10s
		6	Hysteresis = 2
		7	Hysteresis = 4
		8	Hysteresis = 8
		9	Hysteresis = 12

The hysteresis parameter only acts to switch off the relay.

Example. Hysteresis = 4. Trigger level = 500. The relay switches ON when the display value is greater or equal to 501 and switches OFF when is lower or equal to 496.

Although data type = 1 is used (Integer hexadecimal) the value used to compare with the trigger value (Parameters 7 and 9) is always decimal.

Example: Trigger value = 200 (C8 hexa). The relay switches ON when the display value is greater than C8 hexa.

4.4.3 Parameters to define the colour.

To define the colour the 2 internal bits (**r1** and **r2**) are used.

The following parameters are used to define colours.



Colour if internal bits are OFF. To change the colour push 7->5 key. Upon pressing + the next parameter is shown.



Colour if internal bit **r1** is ON. To change the colour push 7->5 key. Upon pressing + the next parameter is shown.



Colour if internal bit **r2** is ON. To change the colour push 7->5 key. Upon pressing + the next parameter is shown.



Colour if internal bits **r1** and **r2** are ON. To change the colour push 7->5 key. Upon pressing + the next parameter is shown.

4.4.4 Work with only one colour.

To work always with only one colour set up the following parameters:

Parameter	Value
6	20
7	0
8	20
9	0
nr	Colour
r1	-----
r2	-----
r3	-----

Red Colour = 0
Green Colour = 1
Yellow Colour = 2

Parameters **7** and **9** may have any value.

Parameters **nr**, **r1**, **r2** and **r3** should have the same colour.

Independently of work colour, the parameters set up always uses RED colour.

4.5 DeviceNet Protocol.

4.5.1 Block structure:

4 double words (DW) are sent in each transmission block. Total 16 bytes. The information that the block must contain is different depending on the type of frame programmed in parameter 2. The transmission sequence is started with DW1 byte 0 and ends with DW4 byte 15.

DW1				DW2				DW3				DW4				CRC
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	

4.5.2 Data type = 0:

Display a double integer. (DW). The value to be displayed must be entered in DW1, where 0 is the least significant byte.

Block examples for a 4 digits display.

DW1				DW2				DW3				DW4				CRC
D8	06	00	00	X	X	X	X	X	X	X	X	X	X	X	X	

4 digits
display

1	7	5	2
---	---	---	---

DW1				DW2				DW3				DW4				CRC
F6	00	00	00	X	X	X	X	X	X	X	X	X	X	X	X	

4 digits
display

	2	4	6
--	---	---	---

4.5.3 Data type = 1:

Display a double integer in hexadecimal format. (DW). The value to be displayed must be entered in DW1, where 0 is the least significant byte.

Block examples for a 4 digits display.

DW1				DW2				DW3				DW4				CRC	4 digits display			
D8	06	00	00	X	X	X	X	X	X	X	X	X	X	X	X		0	6	D	8

4.5.4 Data type = 1:

Display a string of digits. The value to be displayed must be entered in DW1, DW2 and DW3, where the last valid byte sent will be the one to the right of the display.

Block examples for a 6 digits display. Code in ASCII hexadecimal.

DW1				DW2				DW3				DW4				6 digits display					
35	36	37	38	39	00	00	00	00	00	00	00	00	00	00	00		5	6	7	8	9

DW1				DW2				DW3				DW4				6 digits display						
35	36	37	38	39	31	32	33	00	00	00	00	00	00	00	00		7	8	9	1	2	3

For a character or group of characters to be displayed in flashing mode, codes 08(Start) and 09(End) must be used.

Example:

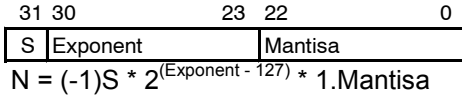
On a 6-digit display to display: 123456 with digits 3 and 4 flashing.

In ASCII code the following must be sent : 49 50 08 51 52 09 53 54.

In hexadecimal code the following must be sent : 31 32 08 33 34 09 35 36.

4.5.5 Data type = 3:

Display a real number. The value to be displayed must be entered in DW1, where 0 is the least significant byte. The real numbers must be in 4-byte IEEE format.



Block example for a 6 digits display. 2 decimals.

DW1				DW2				DW3				DW4				CRC	
9A	99	73	45	00	00	00	00	00	00	00	00	00	00	00	00	00	00

6 digits display

3	8	9	7.	6	0
---	---	---	----	---	---

DW1				DW2				DW3				DW4				CRC	
29	9C	6B	43	00	00	00	00	00	00	00	00	00	00	00	00	00	00

6 digits display

	2	3	5.	6	1
--	---	---	----	---	---

4.5.6 Valid Characters:

Numerical displays can only display numbers and some characters. All valid characters and their representation in hexadecimal format are shown below.

CHARACTER	0	1	2	3	4	5	6	7	8	9	A	b
Hexa	30	31	32	33	34	35	36	37	38	39	41	62
ASCII	48	49	50	51	52	53	54	55	56	57	65	98

CHARACTER	C	c	d	E	F	H	h	i	J	L	n	o
Hexa	43	63	64	45	46	48	68	69	4A	4C	6E	6F
ASCII	67	99	100	69	70	72	104	105	74	76	110	111

CHARACTER	P	r	U	u		,	.	-	—	'	—	=
Hexa	50	72	55	75	20	2C	2E	2D	16	27	28	3D
ASCII	80	114	85	117	32	44	46	45	22	39	40	61

4.5.7 Colour option:

In the equipments with colour option is possible to set the colour modifying the value of register DW4 in bytes 14 and 15. In byte 14 character X (88 o 58h) must be placed while in byte 15 we will place the colour code..

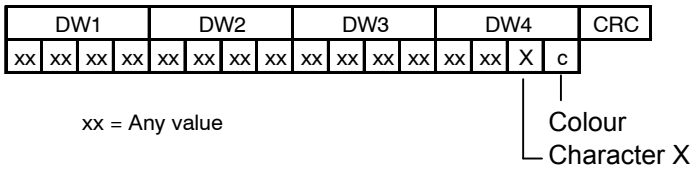
The valid colour codes are:

Red colour = 0

Green colour = 1

Yellow colour = 2

The value in registers DW1, DW2, DW3 and DW4 bytes 12 and 13 aren't significant.



4.6 Installation of Module GSD .

The appropriate GSD module must be installed to communicate with a display. This can be obtained from the website: www.ditel.es

STATEMENT OF CONFORMITY



DISEÑOS Y TECNOLOGIA, S.A.
Poligon Industrial Les Guixeres
c/ Xarol 8C
08915 BADALONA SPAIN

As the builder of the equipment of the **DITEL** brand:
Numerical display with series connection.
Model : DN-109ND in all versions.
Model : DN-119ND in all versions.
Model : DN-129ND in all versions.

We state under own responsibility that the above mentioned product
complies with the following European:
Regulation: 73/23/CEE Regulation of low voltage and modification 93/68/CEE
Standard UNE-EN61010-1 Security in electric equipment

Regulation: 89/336/CEE Regulation of electromagnetic compatibility and
modifications 92/31/CEE and 93/68/CEE
Standard UNE-EN61000-6-4 Generic emission standard. Industrial
environment
Standard UNE-EN61000-6-2 Generic immunity standard. Industrial
environment

Badalona, 16 of June 2008

A handwritten signature in black ink, appearing to read 'Josep Manel Edo', is written over a horizontal line.

Josep Manel Edo
Technical Manager