

CONFIGURATION HANDBOOK

CCN165



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Device Presentation

The CCN165 is a comparator for parallel numeric code for a simultaneous control of two mechanical organ. The output relays can be use for a stop when the gap is too high or in case of default. The display allows a fast diagnosis of functioning and for check the parameters of device.

FUNCTIONING

Each group of inputs have up to 25 bits, GRAY code.

The IN01 inputs is for low byte (LSB), the IN25 inputs is for high byte (MSB).

The CCN165 read the state of all inputs every 10ms. After convert this reading from GRAY code to BINARY code, and formatting according the parameters setting (resolution, type of logic), the CCN165 calculate the gap between the "right" inputs and the "left" inputs (positive gap if Right > Left or negative if Right < Left). This gap is compare to threshold parameters for alarms.

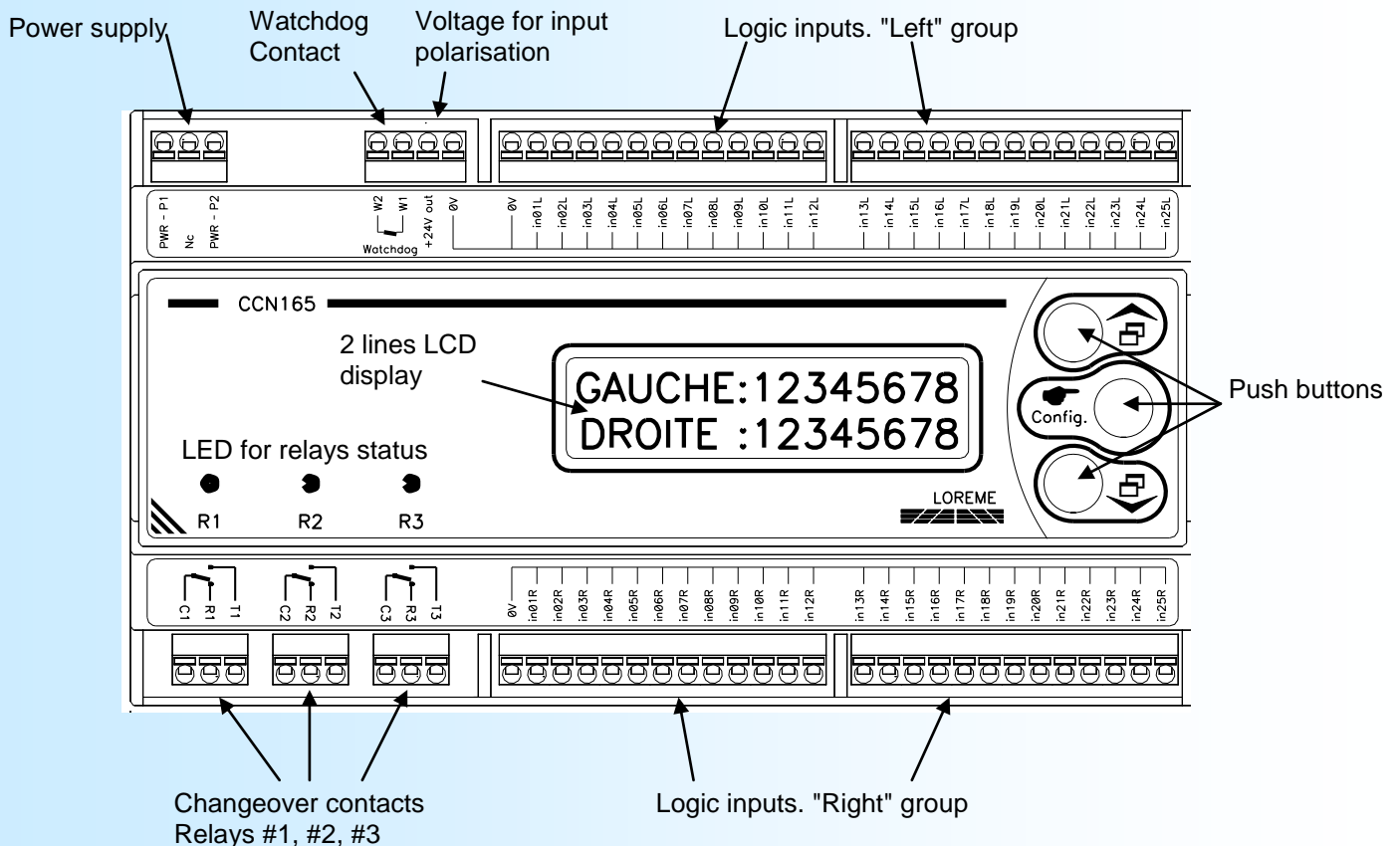
A output contact call "Watchdog" is available. This contact is close in normal operation. If this contact is opened, the CCN165 device not operating normally.

The CCN165/S is a "safety" model. The differences with the standard model are:

- Front face with yellow colour,
- No display configuration,
- Three alarm relays with high threshold and common value on the absolute gap Right/Left.

LED and RELAYS operating:

- The Led on the front indicate the status of relays (LED on = relay activated, LED off = relay release)
- The relays go to alarm state when user access to configuration.
- On factory output, relays are with high alarm, negative security function (relay is activated with no alarm and release on alarm) and the activation / deactivation delay is 1 second.
- For firmware revision 0.4 and higher, it is possible to modify the relays configuration.



Operating

1) Visualization

The CCN165 display some information. The buttons ▲ and ▼ allow to skip between 4 visualization pages:

Page 0 (information display at the power on)

GAUCHE: 958 Display of input groups value "Right" and "Left".
DROITE: 984

Page 1

ECART: 14 Display of gap.
R1:-- 2:-- 3:-- A 'AL' message indicates the relay is on alarm (threshold overflow).

Page 2

GAUCHE:000000000 Display of IN01 - IN25 inputs. "Left" group.
000000000000000000

Page 3

DROITE:000000000 Display of IN01 - IN25 inputs. "Right" group
000000000000000000

2) Configuration for the standard version

The CCN165 is fully configurable with the front face buttons. Access to the Configuration setting with the 'Config' button.

CONFIGURATION A temporary message is display to show the model revision
REV 0.5 (Hard and Soft revision).

If the "password" function is activated, user should enter the password to access configuration.

MOT DE PASSE ? To enter the password, use the ▲ and ▼ buttons.
---- A black square indicate the character whose be modify.
 The 'Config' button validate the character.

If password is not good, an error message is display and the device go back to measure mode.

CONFIG ENTREE? Setting of inputs parameters.
(O-N) Button ▼ (NO) to skip to next menu. Button ▲ (YES) to access to parameter.
RESOLUTION? Resolution is the number of bits taking account (1 to 25)
10bits use buttons ▲ , ▼ to setting value. Validate with 'Config'

LOGIQUE ENTREE? Define the logic of inputs. 'NORMAL' if the input is OFF with a "0" logical input.
<NORMAL>INVERSE 'INVERSE' if the input is OFF with a "1" logical input.
 use buttons ▲ , ▼ to select value. Validate with 'Config'.

CONF. AFFICHAGE? Define the display parameters.
(O-N) This parameters are available for input group Right and Left.

NB DECIMALES? Define the number of decimal (0 to 3).
2

AFFICHAGE 0%? Define the value to be display when the input is at 0% of resolution.
0

AFFICHAGE 100%? Define the value to be display when the input is at 100% of resolution.
100.00

TPS DE REPONSE Define the response time of device. decrease the possible fluctuations.
1.0sec

CONF. TEXTE?
(O-N) Define the label display for inputs group. ▼ to skip this parameter or ▲ to modify the parameter.

TEXTE GAUCHE:
GAUCHE Label for "Left" group. ▲ , ▼ to choose a character, 'Config' to validate. (up to 6 characters)

TEXTE DROITE:
DROITE Label for "Right" group.

Note: For the firmware revision 0.4 and higher, the threshold can be negative and it is possible to access to advanced setting.

CONF. RELAIS 1?
(O-N) Parameters for relay #1. ▼ to skip or ▲ to modify parameter.

TYPE ECART:
ABSOLU <SIGNE> Type of gap
the gap can be absolute or signed.

SEUIL ECART:
56.00 Define the alarm threshold on gap.

PARAM. AVANCES?
(O-N) Button ▲ (YES) to access to advanced parameters.

SENS SEUIL:
<HAUT> BAS Define the sens of alarm (High alarm or Low alarm).

TPS DE RETARD
1.00sec Define the activation and the deactivation delay (0 to 900s).

SECURITE RELAIS
POS. <NEG.> Define the security of relay.
("pos." if relay activated on alarm. "neg." if relay activated without alarm)

CONF. RELAIS 2?
(O-N) same parameters for relay #2.

CONF. RELAIS 3?
(O-N) same parameters for relay #3.

OK! End of configuration. Parameters are saved in memory.

3) Configuration for the "security" model (CCN165/S)

The configuration of CCN165/S is different to the standard model:

- No display configuration, values are integer,
- The relay are with high alarm and with common threshold. The delay is set to 1 second,
- The threshold value is the binary value.

If the "password" function is activated, user should enter the password to access configuration.

CONFIG ENTREE?
(O-N) Setting of inputs parameters.

RESOLUTION?
10bits Resolution is the number of bits taking account (1 to 25).

LOGIQUE ENTREE?
<NORMAL>INVERSE Define the logic of inputs.

SEUIL?
(O-N) Define of alarm threshold (same for the 3 relays).

SEUIL ECART:
1024

OK!

In configuration mode, if no action during 90 seconds, the device go back to measure mode and discard any change.

Advanced using

1) Protect of configuration

When the password function is activated, the user should enter a 4 characters password to access to configuration.

1-1) Function activation

When the device is on measure mode, press the buttons ▲ and ▼ for at least 5 seconds. The following message is display:

MOT DE PASSE ?	Change the selection with ▲ or ▼ .
OUI <NON>	Confirm with 'Config' button.

- <NON> : the function is no more use. the configuration access is free.

- <OUI> : activate the function. with a 4 character password.

MOT DE PASSE ?	Enter the password with ▲ and ▼ .
----	The 'Config' button validate the character.

Note: When you activate the password function, a new code need to be enter.

1-2) Protected configuration

When you enter to the configuration mode :

CONFIGURATION	A temporary message is display
REV x.y	(x: Hard revision. y: Soft revision).

MOT DE PASSE ?	Enter the password with buttons
----	A black square indicate the chararter to be modify.
	'Config' button validate the character.

In case of error, the message 'CODE NON VALIDE!' is displaying for 3 seconds. The device go back to measure menu.

RS232 link setting

The device can be configured or updated in terminal mode via an RS232 link.

Step 1: Driver installation for USB / RS232 adapter



- download driver at www.loreme.fr:
http://www.loreme.fr/aff_produits.asp?rubid=53&langue=fr
 - Click on executable file to install the driver,
 - Plug the cable on a USB port, Windows install a new serial communication port **COMx** (x >= 4).
- Note :**
The use of the cable on another USB port don't generates a new communication port. Use of another adapter generates another communication port number (COMx) and requires the reconfiguration of the hyperterminal.

Step 2: Setting of terminal emulation software (PC with windows).

1 The terminal emulation software for PC « HyperTerminal » is resident in windows up to XP version. For later versions, it is downloadable on : www.loreme.fr in **download part** (<http://www.loreme.fr/HyperTerm/htpe63.exe>)
=> Run the downloaded software to install it.

2 Start a "hyper Terminal" connection :
- Click on "**START**" button
Up to XP version
- Go to "**Programs \ Accessories \ Communication \ Hyper Terminal**"
- Click on "**Hypertrm.exe**"
Or if the software was downloaded
- Go to "**All programs \ HyperTerminal Private Edition**"
- Click on "**HyperTerminal Private Edition**"

3 Enter name for the new connection

4 Choose the communication port related to the adapter.

5

Choose:
- 9600 bauds
- 8 DATA bits
- no parity
- 1 stop bit
- **XON/XOFF**

6 The PC is now in terminal mode, connect it to the device by plugging the RS232 cable.

7 When leaving Hyper terminal, the following window will appear. By saving, the terminal session will start with the same configuration.

Thus, the shortcut **LOREME.ht** will permit to communicate with all LOREME devices.

Note: To modify the parameters of terminal session whereas this one is connected, it is necessary to disconnect it, modify the parameters and then to reconnect it.

FIRMWARE update

To access to the firmware update function, you must first open an HyperTerminal session on a PC, connect the device to the PC with the RS232 link cable and then power on the device.

The following character is send to the terminal:

> <————— The device sends this character then it waits the « F » key during 0.5 s.

If the user has pressed the « F » key in the allowed time, the following message is displayed in the HyperTerminal windows:

FIRMWARE LOADER Rev2 READY TO TRANSFER...

The device is now in the firmware load mode and is waiting for the firmware file. This file is provide by LOREME and contain the firmware code in Intel HEX format.

Select the « Transfer », « Send a text file ... » in the HyperTerminal menu.
Select the directory and open the file. The HyperTerminal program begins to send the file to the device.

FIRMWARE LOADER Rev2 READY TO TRANSFER

***** <————— The star characters appears to show the progress of the uploading.

At the end, the message « **PROGRAMMING OK !** » is display if no errors occurs. Otherwise, these following message could be displayed:

- **SERIAL COM ERROR !** Error during receipt.
- **SERIAL TIMEOUT !** Waiting time of receipt elapsed (60 s).
- **PROGRAMMING FAILED !** Programming error in the internal flash memory.

Attention

*If an error occurs during the programming process, it is necessary to start again the whole procedure.
A bad programming leads to an inoperative device.*

EMC Consideration

1) Introduction

To meet its policy concerning EMC, based on the Community directives **2014/30/EU** & **2014/35/EU**, the LOREME company takes into account the standards relative to this directives from the very start of the conception of each product.

The set of tests performed on the devices, designed to work in an industrial environment, are made in accordance with **IEC 61000-6-4** and **IEC 61000-6-2** standards in order to establish the EU declaration of conformity. The devices being in certain typical configurations during the tests, it is impossible to guarantee the results in every possible configurations. To ensure optimum operation of each device, it would be judicious to comply with several recommendations of use.

2) Recommendations of use

2.1) General remarks

- Comply with the recommendations of assembly indicated in the technical data sheet (direction of assembly, spacing between the devices, ...).
- Comply with the recommendations of use indicated in the technical data sheet (temperature range, protection index).
- Avoid dust and excessive humidity, corrosive gas, considerable sources of heat.
- Avoid disturbed environments and disruptive phenomena or elements.
- If possible, group together the instrumentation devices in a zone separated from the power and relay circuits.
- Avoid the direct proximity with considerable power distance switches, contactors, relays, thyristor power groups, ...
- Do not get closer within fifty centimeters of a device with a transmitter (walkie-talkie) of a power of 5 W, because the latter can create a field with an intensity higher than 10 V/M for a distance fewer than 50 cm.

2.2) Power supply

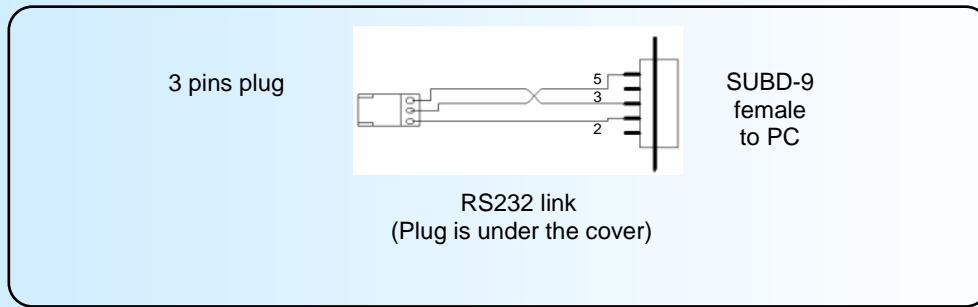
- Comply with the features indicated in the technical sheet (power supply voltage, frequency, allowance of the values, stability, variations ...).
- It is better that the power supply should come from a system with section switches equipped with fuses for the instrumentation element and that the power supply line be the most direct possible from the section switch.
- Avoid using this power supply for the control of relays, of contactors, of electrogates, ...
- If the switching of thyristor statical groups, of engines, of speed variator, ... causes strong interferences on the power supply circuit, it would be necessary to put an insulation transformer especially intended for instrumentation linking the screen to earth.
- It is also important that the installation should have a good earth system and it is better that the voltage in relation to the neutral should not exceed 1V, and the resistance be inferior to 6 ohms.
- If the installation is near high frequency generators or installations of arc welding, it is better to put suitable section filters.

2.3) Inputs / Outputs

- In harsh conditions, it is advisable to use sheathed and twisted cables whose ground braid will be linked to the earth at a single point.
- It is advisable to separate the input / output lines from the power supply lines in order to avoid the coupling phenomena.
- It is also advisable to limit the lengths of data cables as much as possible.

Wirings

DEVICE - TERMINAL serial link



Wiring

- pins P1, P2 : power supply
- pins W1, W2 : Watchdog contact.
- pins '+24V', '0V': polarization voltage for inputs
- pins IN01L,...,IN25L: "LEFT" inputs group.
- pins C1, R1, T1: Contact relay #1
- pins C2, R2, T2: Contact relay #2
- pins C3, R3, T3: Contact relay #3
- pins IN01R,...,IN25R: "RIGHT" inputs group.

