

Implementing Communication

- MODBUS Field Bus
- VDI Network under TCP/IP Protocol
- MODBUS Master Web Server



« Millenium II WEB » MODBUS Master Web Server



« Millenium 3 + XN03 » MODBUS Slave Logic Controller



« Millenium II + XC04 » MODBUS Slave Logic Controller



« Millenium Display » MODBUS Slave Control Panel

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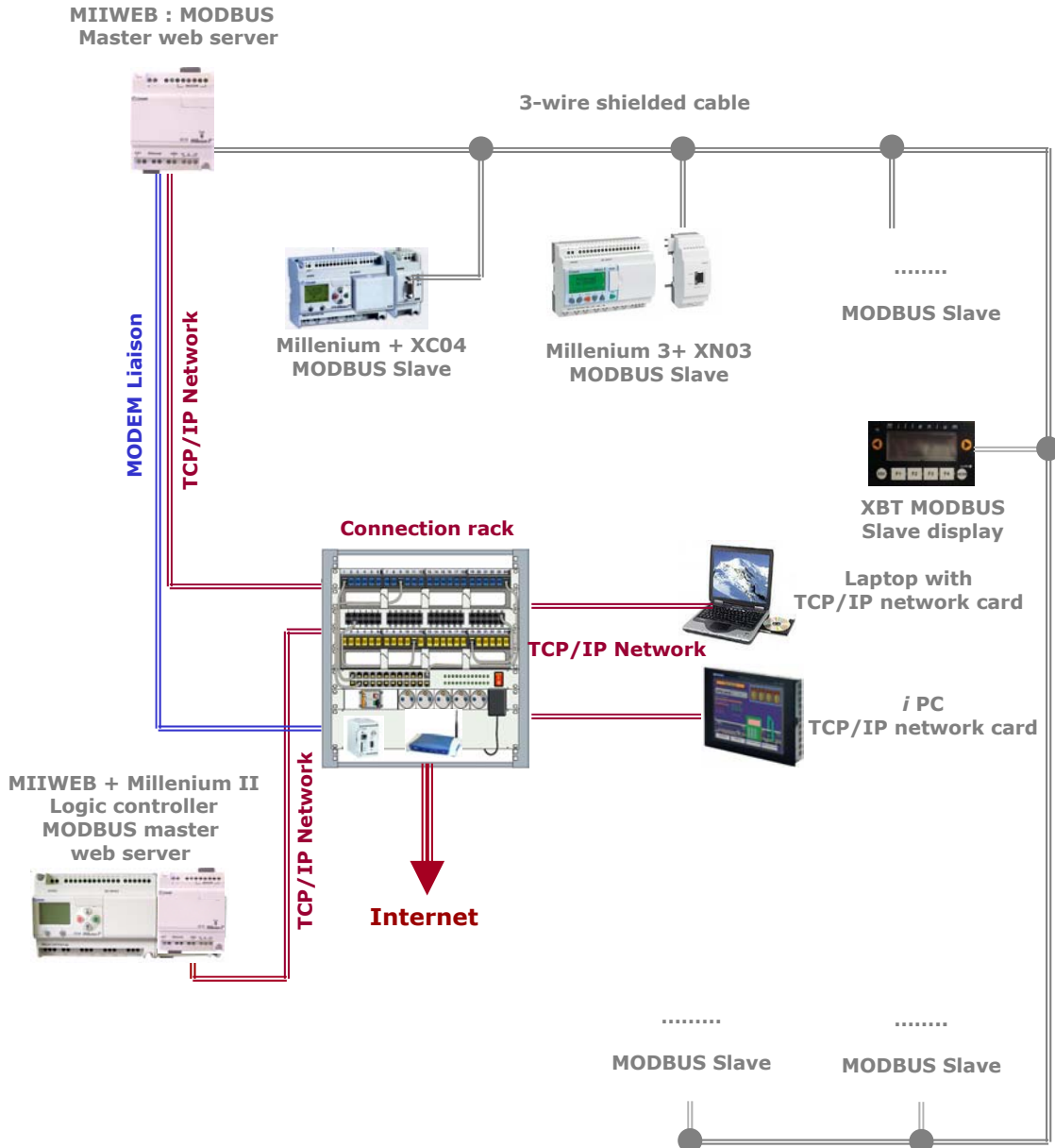
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1 – Architecture Surrounding the M2WEB

The eTice web server provides for connecting automated industrial processes or tertiary accommodation processes to a VDI network under TCP/IP protocol and to a MODBUS field bus.

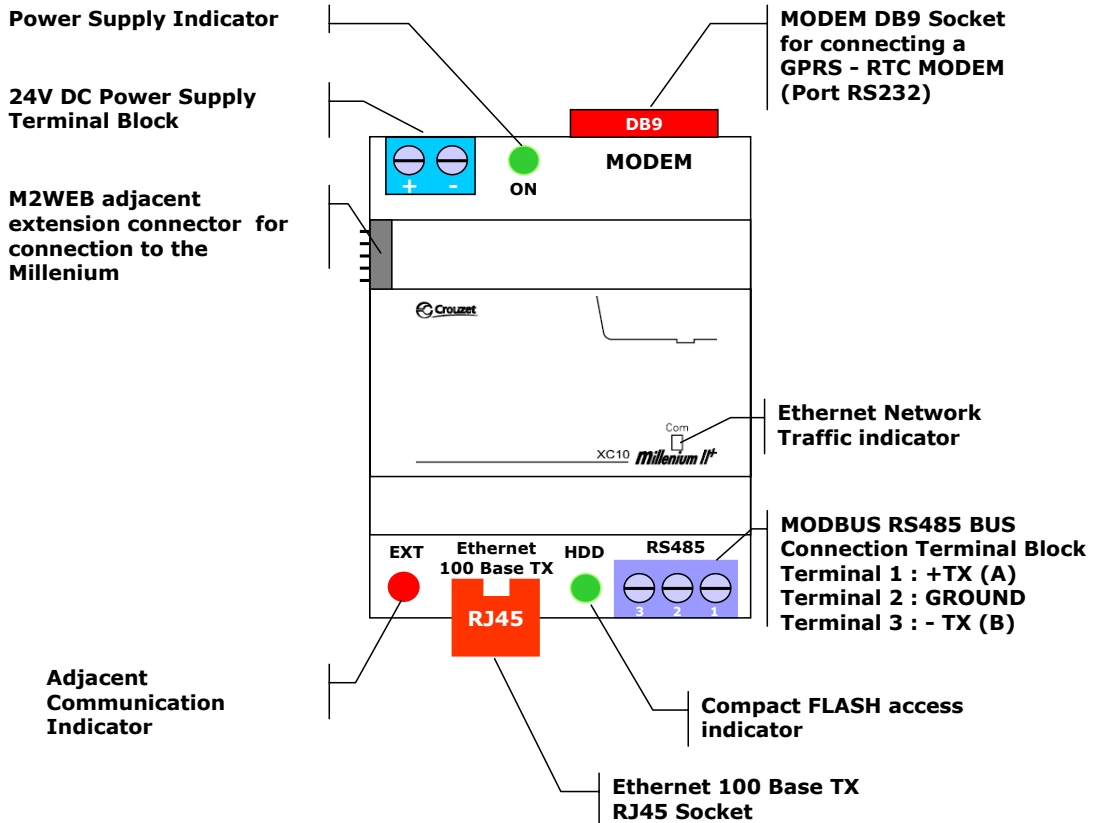
1.1 Communicating Architecture



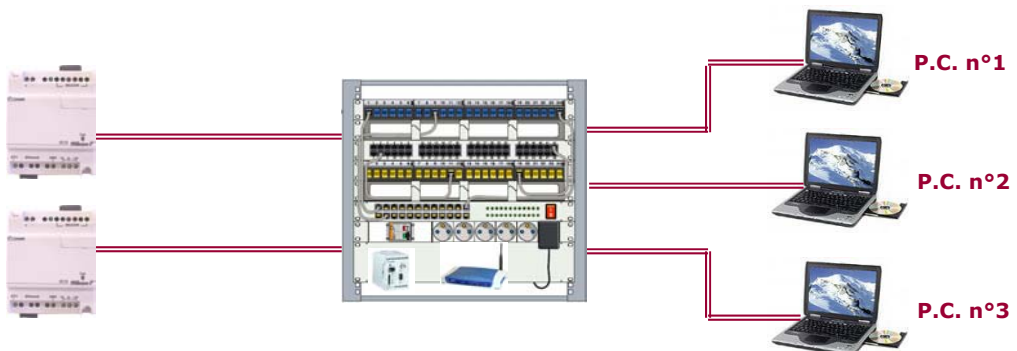
2 – MIIWEB « MODBUS Master Web Server »

2.1 Connection

2.1.1 Peripherals Available



2.1.2 Connection to a VDI Network via a Connection Rack



The connection rack must be powered; MIIWEB's RJ45 connector is connected to the Ethernet network (to the SWITCH in the connection rack) using a non-twisted computer cable (4-pair category 5 FTP minimum).

Ethernet
100 Base TX

RJ45

Ethernet 100 Base TX
eTice RJ45 socket

In this configuration, the connection has to be made between the data panel in the connection rack and a switch or router of the ADSL type.

When MIIWEB is connected to the ETHERNET network, the red LED flashes randomly.

2.1.3 Connection Directly to a Computer Workstation



Twisted computer cable



P.C. n°1

The command rack must be powered; MIIWEB's RJ45 connector is connected directly to the P.C. using a twisted computer cable (4-pair category 5 FTP minimum).

Ethernet
100 Base TX

RJ45

Ethernet 100 Base TX
eTice RJ45 socket

When MIIWEB is connected to the ETHERNET network, the red LED flashes randomly.

2.1.4 Connection to a MODBUS Network

MIWEB is a MODBUS master web server; it communicates with all 8-bit, 3-wire RTU MODBUS slaves. MIIWEB operates on RTU MODBUS using an RS485 liaison. In this configuration it is theoretically possible to connect 31 slaves at a distance of no more than 1200m.

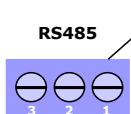
Each slave is identified on the BUS by an address which must be unique (between 1 and 31).

So MIIWEB is the sole network master, its role is to interrogate the slaves or to send them commands using the functions defined in the RTU MODBUS protocol.

The maximum transmission rate imposed by the Milleniums is 57600 Bauds, but the recommended rate is 19200 Bauds (default value).

It is mandatory that all the equipment connected to the RTU MODBUS network driven by MIIWEB be **SLAVES**.

The MODBUS network is connected to MIIWEB via a 3-wire terminal block



RS485

**MODBUS RS485 BUS
Connection block**
Terminal 1 : +TX
Terminal 2 : GROUND
Terminal 3 : - TX

The signals used in an RS485 RTU MODBUS connection are :

- TX+
- TX -
- Ground

On leaving the factory, the MIIWEB web server has its own parameters, and the user must configure the TCP/IP stack and its environment using the « eTice_soft » software.

You must validate the following configurations to be able to implement the web server :

- the network address as a function of the network in the neighbourhood,
- safety access, identification codes,
- the communication parameters, type of extension connected to eTice (for example addresses of the Milleniums connected whether by adjacent or MODBUS connection.
- the WEB pages related to your control command applications.

2.2.1 TCP/IP Configuration

a - Modifying a Parameter

This configuration phase provides for configuring the « MIIWEB » web server in relation to the various peripherals connected :

- « Millenium II » logic controllers, TCP/IP gateway via the MODBUS bus,
- SMTP message server,
- GSM, GPRS, RTC, modems
- DNS clients.

From the eTice_Soft program's main menu bar, click on the « Tools » tab, then on « Configure the WebServer »



Configure the MODBUS communication with the MilleniumIIs

Add all the addresses of the « Millenium » controllers driven by the MIIWEB TCP/IP web server

Select a modem compatible with MIIWEB and fill in the various fields corresponding to your modem communication application

Configure if necessary, the fields for the DNS server

Configure your message server

Advanced configuration of the WebServer

MODBUS RTU Parameters: MODBUS Baudrate: 57600 bps, Parity: Even, Advanced settings, System clock source: Millenium #1

Declaration of Milleniums connected to WebServer:

- ☒ Connected as contiguous extension (Millenium II only)
- ☐ Connected on MODBUS RTU (RS485)

Add to List

	Connecté à	Type	Adresse
1	EXTENSION	Millenium II	
2	MODBUS	XN03 (Millenium 3)	1

☒ Reset registers IXC or IXN for each new project transfer or reboot

MODEM Parameters (for SMS and PPP Connections):

☒ Activate PPP Server

Select the MODEM: GPRS-WAVECOM:FASTRACK(M1306B)

RS232 parameters for communication with the MODEM: Baudrate: 115200 Bauds, Hardware flow Control RTS/CTS: ☒

PPP Client parameters:

Phone number of the PPP Internet Provider: *99***1#

LOGIN: , PASSWORD: , GPRS APN (only for GPRS MODEM): , Connection program: Never

PPP Authentication Method: PAP

Informations and Malfunctions (Faulty Millenium connections, enable to archive, or other system informations):

If MODEM, Phone Number of the person to be notified: +330000, Sending a SMS for internal alarm: ☐

If service activated, eMail address of the person to be notified: MrX@fai.fr, Use history file (LOGFILE.TXT): ☒

Network services:

Company's Mail address: Societe@fai.fr

☒ eMail service active (SMTP Client)

☒ DNS Client

☐ DynDNS Client (Dynamic DNS)

Parameters of the eMail Server (SMTP Server):

Domain Name of the SMTP Server: monfai@smtp.fr

IP Address of the SMTP Server: 0 - 0 - 0 - 0

DNS Servers parameters:

Primary DNS IP Address: 0 - 0 - 0 - 0

Secondary DNS IP Address: 0 - 0 - 0 - 0

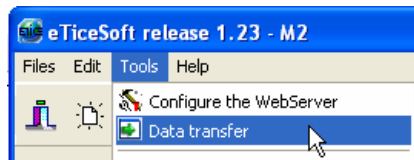
Buttons: Cancel, Create the configuration file and put it in UpLoad list

Click on « Create the file and include it in the downloading list », as a result of this operation, a configuration file « CONFIG.INI » is created. WARNING Do not forget to transfer this configuration file into eTice via the TCP/IP connection; this will take place after compiling the « embedded site web with monitoring pages » project or simply after compiling in order to perform a transfer of the configuration alone into the MIIWEB web server (refer to the Data Transfer chapter).

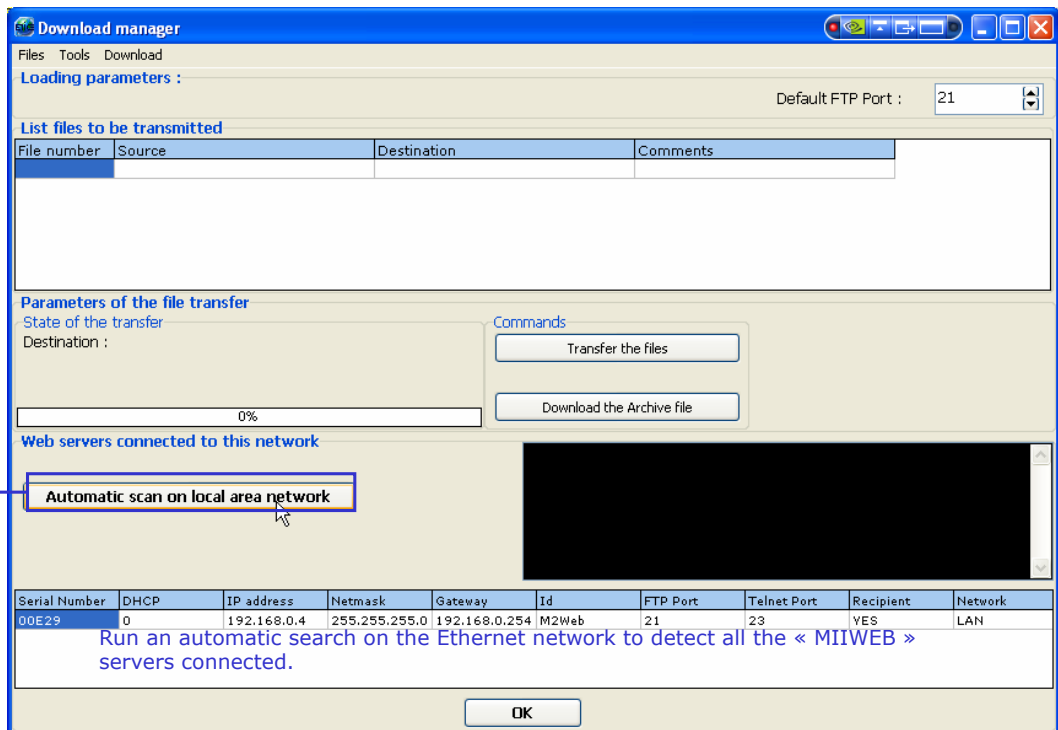
WARNING, every program or configuration designed using eTice_soft must be loaded into the MIIWEB web server, it is imperative that a compilation be performed to construct the files to be loaded into MIIWEB.

b - Search for the MIIWEBs connected to the intranet network

From the program's main menu bar, click on the « Tools » tab, then on « Data transfer »



The following window appears



Serial Number	DHCP	IP address	Netmask	Gateway	Id	FTP Port	Telnet Port	Recipient	Network
00E29	0	192.168.0.4	255.255.255.0	192.168.0.254	M2Web	21	23	YES	LAN

In this case, there is only one web server connected, and the user can now access the embedded web site to run a download or to access the embedded web site from the http function.

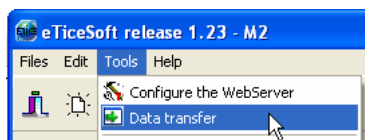
Every time the search is run, all the MIIWebs connected to the local network are identified, together with their main TCP/IP parameters, i.e. :

- the MAC address (Serial Number)
- the IP address
- the sub-network mask
- the gateway,

c - Configuring MIIWEB's TCP/IP Stack

Every MIIWEB TCP/IP stack can be modified as regards the manufacturer's parameters,; there are several ways of configuring them, including one using the eTice_soft software.

From the program's main menu bar logiciel, click on the « Tools » tab, then on « Data transfer »



Then run a search for the MIIWEBs connected to the Ethernet network to identify the web server whose TCP/IP parameters you want to configure.

To change the parameters of an MIIWEB, click on the « Auto-search on the local network » button, then click on the line for the MIIWEB concerned, and click on the right mouse button.

In the contextual menu which is displayed, click on the « Configure the IP address » option, the following window then opens :

Serial Number	DHCP	IP address	Netmask	Gateway	Id	FTP Port	Telnet Port	Recipient	Network
00E29	0	192.168.0.4	255.255.255.0	192.168.0.254	00E29	21	23	YES	LAN

IP Address configuration (LAN only)
HTTP
Telnet
FTP
ping
Add WebServer in the list
Delete the selected WebServer from list

Parameters of the Ethernet network to be configured

WebServer

General informations

Current IP address of the PC : 192.168.0.45

Serial number or MAC address of the product : 00E29

IP parameters of the WebServer

IP Address : 192.168.0.4

Subnet mask : 255.255.255.0

IP address of the default gateway : 192.168.0.254

Enable the DHCP client ☐

Configure !

Close

Enter the session code + password corresponding to the Web server logins (NOTE, for Administrator or Supervisor logins only)

Authentification needed

Enter Supervisor or Administrator session codes

Connection to WebServer 00E29

Login :

Password :

Cancel

OK

Change the various fields to reconfigure the IP address.

If the system is connected to a connection rack equipped with an ADSL router, or if the network is equipped with a DHCP server, you can check the « Activate configuration by DHCP » box to configure the MIIWEB's IP address automatically, **otherwise this box must not be checked !**

Click on Reconfigure, from this point MIIWEB takes account of the new parameters and changes its IP address.

Click on Close to quit the window.

The « MIIWEB Downloading Manager » window comes back to the foreground.

Press the « Auto-search » button, the MIIWEB appears with its new address.

There are several parameters to be configured for the web server; these settings must be made ONLY once you are connected to the embedded web site from an Internet navigator with the aim of configuring for example the user identification codes and logins (refer to the MIIWEB web server documentation)

2.2.2 MODBUS Configuration

The communication parameters to be set for a network driven by MIIWEB are :

- Type of network : RTU MODBUS
- Type of connection : RS485 (2 wires)
- Transmission (or data flow) rate : from 300 to 57600 bps (19200 by default)
- Parity : None
- Length of a data word : 8 bits
- Stop bit : 1

WARNING, all the MODBUS slaves controlled by MIIWEB must be configured with the data above.

3 – MIIWEB MODBUS Web Server Controller + Millenium II

3.1 Connection

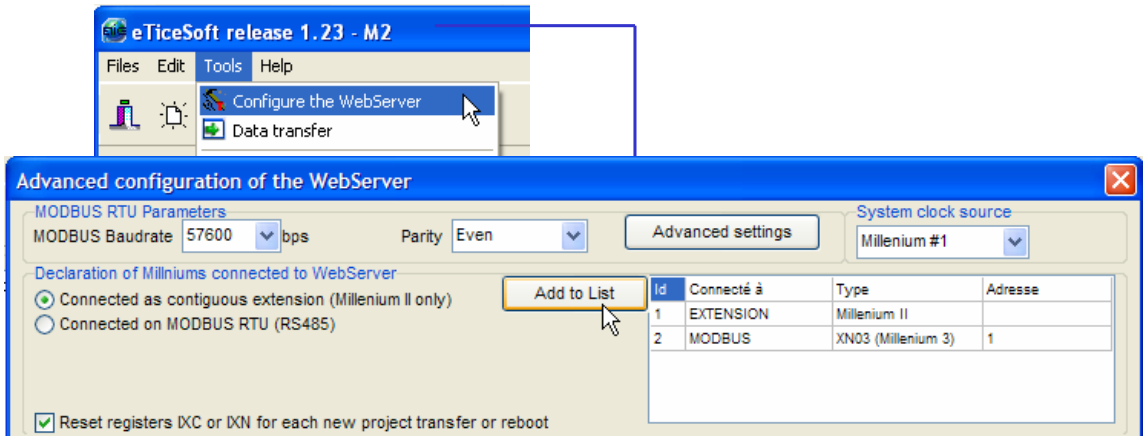
The MIIweb server extension is connected to the adjacent lateral extension on the « Millenium II » logic controllers in the **XT20 range ONLY** via a pin connector.



3.2 Configuration

3.2.1 Configuring MIIWEB

From the eTice_Soft program's main menu bar, click on the « Tools » tab, then on « Configure the WebServer »



Procedure :

- 1 – Set the MODBUS transmission rate : **19200 bauds**
- 2 – Choose the type of Modbus extension for the Milleniums : **XC03**
- 3 – Choose the type of connection : **connected as an adjacent extension**
- 4 – Click on « **Add to the list** »
- 5 – Click on « **Create the file and include it in the downloading list** »
- 6 – Create a new project
- 7 – Click on « **Compile and transfer into MIIWEB** », then click on « **Transfer to MIIWEB** »
- 8 – Click on « **Auto-search on the local network** » to identify the MIIWEB to be configured
- 9 – Choose the MIIWEB by clicking on the corresponding line
- 10 – Click on « **Transfer the files** »

3.2.2 Configuring the Millenium II

From the « **Crouzet M2 Software** » program, proceed as follows :

Procedure :

- 1 – Click on « **New** »



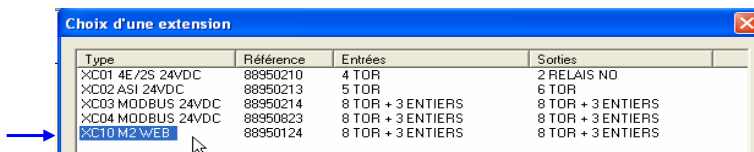
- 2 – Click on the « **Millenium XT 20** » image
- 3 – Select the P/N for the Millenium for your application from the list below

Type	Référence	Entrées	Sorties
XT20 R 24VDC	88950061	4 TOR + 8 TOR/ANA	1 RELAIS INV + 7 RELAIS...
XT20 S 24VDC	88950062	4 TOR + 8 TOR/ANA	6 PwM/TOR + 2 TOR
XT20 R 100-240VAC	88950063	12 TOR	1 RELAIS INV + 7 RELAIS...
XT20 R 24VAC	88950064	12 TOR	1 RELAIS INV + 7 RELAIS...
XT20 R 12VDC	88950065	4 TOR + 8 TOR/ANA	1 RELAIS INV + 7 RELAIS...
XT20 S 12VDC	88950066	4 TOR + 8 TOR/ANA	6 PwM/TOR + 2 TOR
XT20 RN 24VDC	88950069	8 TOR-NPN + 4 TOR/ANA	1 RELAIS INV + 7 RELAIS...

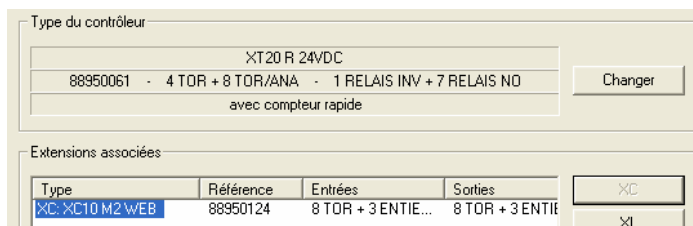
4 – Select the type of Millenium extension by clicking on « **XC** »



5 – Click on « **XC10 M2WEB** »



6 – Click on « **OK** » to validate the configuration



3.3 Addresses of the MODBUS Data Words

3.3.1 XC03 - XC10 Module Words

a – Write word

MODBUS Address in the Millenium	Corresponding Address on the MODBUS network
I1XC .. I8XC : b0, b1, b2, b3, b4, b5, b6, b7, b8	0 : b0, b1, b2, b3, b4, b5, b6, b7, b8
I9XC : 16-bit word	1
I10XC : 16-bit word	2
I11XC : 16-bit word	3

b – Read word

MODBUS Address in the Millenium	Corresponding Address on the MODBUS network
O1XC O8XC : b0, b1, b2, b3, b4, b5, b6, b7, b8	10 : b0, b1, b2, b3, b4, b5, b6, b7, b8
O9XC : 16-bit word	11
O10XC : 16-bit word	12
O11XC : 16-bit word	13

a – Write word

MODBUS Address in the Millenium	Corresponding Address on the MODBUS network
I1XC .. I8XC : b0, b1, b2, b3, b4, b5, b6, b7, b8	0 : b0, b1, b2, b3, b4, b5, b6, b7, b8
I9XC : 16-bit word	1
I10XC : 16-bit word	2
I11XC : 16-bit word	3

b – Read Word

MODBUS Address in the Millenium	Corresponding Address on the MODBUS network
O1XC O8XC : b0, b1, b2, b3, b4, b5, b6, b7, b8	4 : b0, b1, b2, b3, b4, b5, b6, b7, b8
O9XC : 16-bit word	5
O10XC : 16-bit word	6
O11XC : 16-bit word	7

4 – « Millenium II » MODBUS Slave Logic Controller

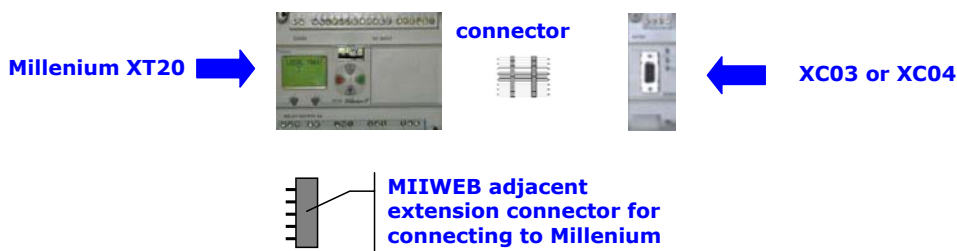
4.1 MODBUS Extension Module for the Millenium II XT20

4.1.1 Connection

The entire XT range of « Millenium II » logic controllers can communicate on the MODBUS network from the following adjacent MODBUS extensions :

- MODBUS XC03 module
- MODBUS XC04 module

The XC03 or XC04 extension is connected to the lateral adjacent extension on the « Millenium II & III » logic controllers in the **XT20 range ONLY** via a pin connector.



4.1.2 Configuring the Logic Controller

From the « **Crouzet M2 Software** » program, proceed as follows :

1 – Click on « New »



2 – Click on the « Millenium XT 20 » image


3 – Select the P/N for the Millenium for your application from the list below

Type	Référence	Entrées	Sorties
XT20 R 24VDC	88950061	4 TOR + 8 TOR/ANA	1 RELAIS INV + 7 RELAIS...
XT20 S 24VDC	88950062	4 TOR + 8 TOR/ANA	6 PWM/TOR + 2 TOR
XT20 R 100-240VAC	88950063	12 TOR	1 RELAIS INV + 7 RELAIS...
XT20 R 24VAC	88950064	12 TOR	1 RELAIS INV + 7 RELAIS...
XT20 R 12VDC	88950065	4 TOR + 8 TOR/ANA	1 RELAIS INV + 7 RELAIS...
XT20 S 12VDC	88950066	4 TOR + 8 TOR/ANA	6 PWM/TOR + 2 TOR
XT20 RN 24VDC	88950069	8 TOR-NPN + 4 TOR/ANA	1 RELAIS INV + 7 RELAIS...

4 – Select the type of Millenium extension by clicking on « XC »



5 – Click on « 24VDC MODBUS XC03 or 24VDC MODBUS XC04 »



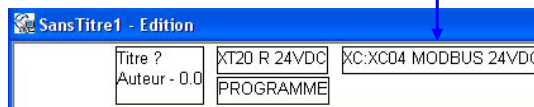
Type	Référence	Entrées	Sorties
XC01 4E/2S 24VDC	88950210	4 TOR	2 RELAIS NO
XC02 ASI 24VDC	88950213	5 TOR	6 TOR
XC03 MODBUS 24VDC	88950214	8 TOR + 3 ENTIERS	8 TOR + 3 ENTIERS
XC04 MODBUS 24VDC	88950823	8 TOR + 3 ENTIERS	8 TOR + 3 ENTIERS

6 – Click on « OK » to validate the configuration



7 – Configure the MODBUS slave module depending on the MIIWEB characteristics

Click on « XC XC04 MODBUS 24VDC »



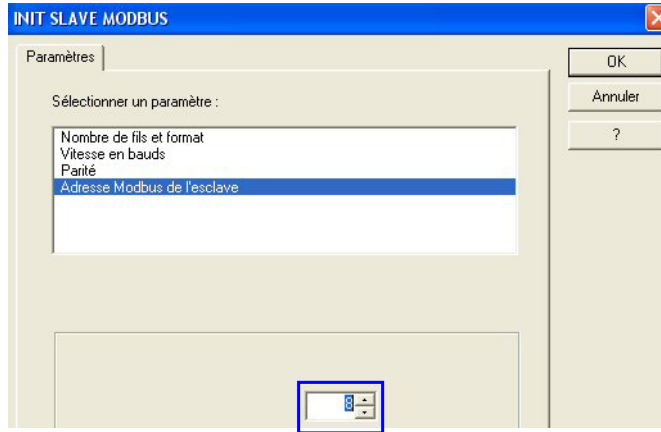
8 – Complete the following MODBUS parameters by selecting the following elements :

9 – Enter the « Number of wires and format » parameter : **2-wire RTU**

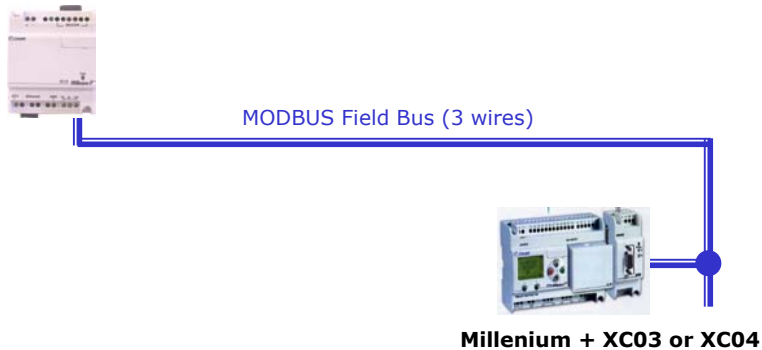
10 – Enter the « Baud rate » parameter : **19200**

11 – Enter the « Parity » parameter : **None**

12 – Enter the « MODBUS address of the slave » parameter : **for example 8**

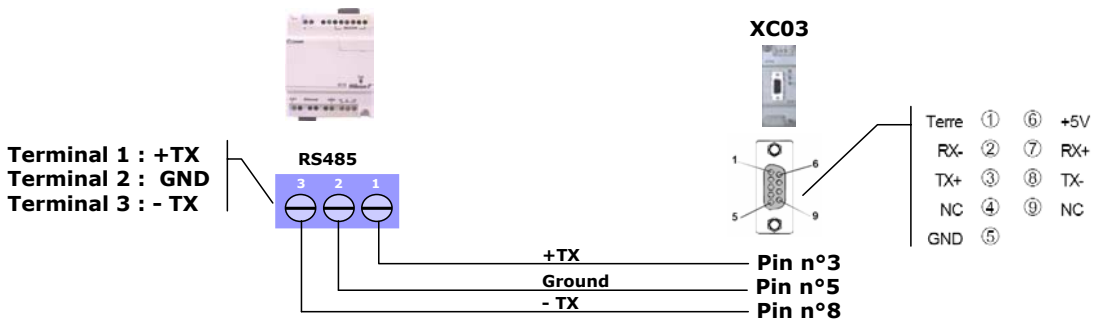


4.2 Connecting the Logic Controller to the MIIWEB via the MODBUS Network



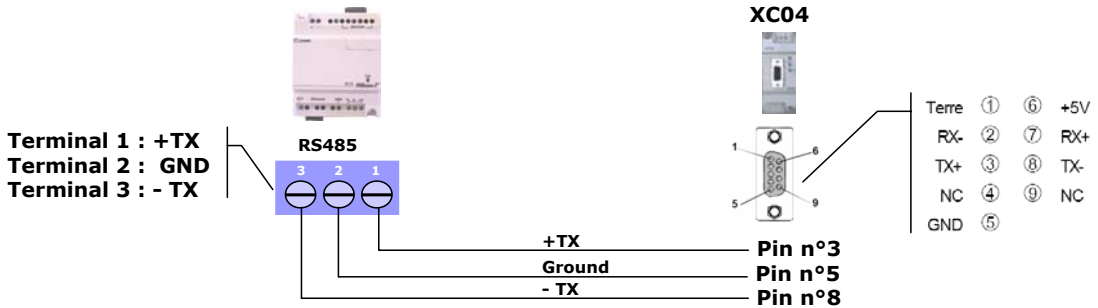
4.2.1 Connecting from an XC03 Module

The MODBUS bus connection between the MIIWEB MODBUS master and an XC03 MODBUS Slave is achieved using a shielded 3-wire cable so as to connect the ground, TX+ and TX- (see wiring below)



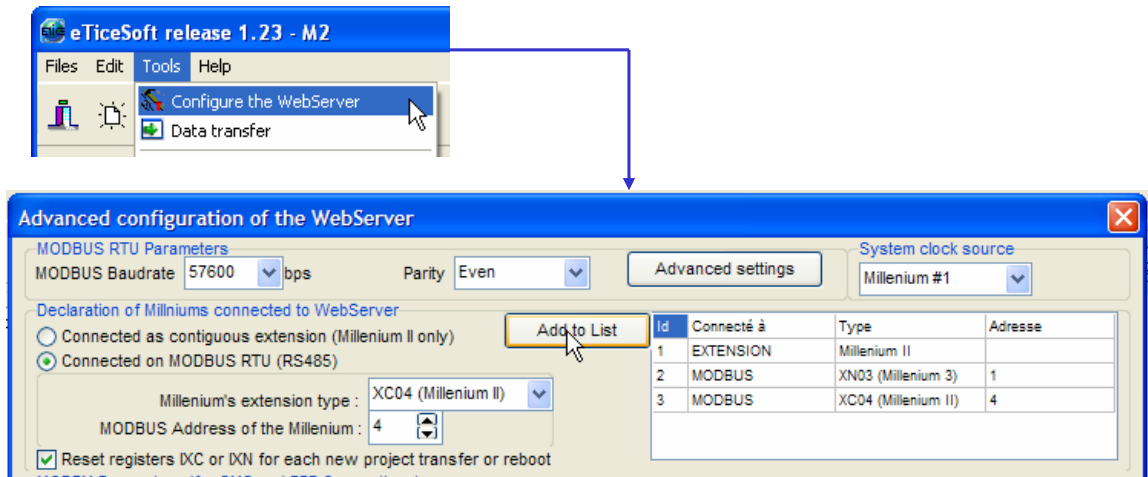
4.2.2 Connecting from an XC04 Module

The MODBUS bus connection between the MIIWEB MODBUS master and an XC04 MODBUS Slave is achieved using a shielded 3-wire cable so as to connect the ground, TX+ and TX- (see wiring below)



4.2.3 Configuring the MIIWEB Web Server

From the eTice_Soft program's main menu bar, click on the « Tools » tab, then on « Configure the WebServer »



Procedure :

- 1 – Set the MODBUS transmission rate : **19200 bauds**
- 2 – Choose the type of Millenium extension : **XC03 or XC04**
- 3 – Choose the type of connection : **connected to MODBUS (RS485)**
- 4 – Enter the MODBUS address of the Millenium connected to the XC03 or XC04 MODBUS module between 1 and 247
- 5 – Click on « **Add to the list** »
- 6 – Click on « **Create the file and include it in the downloading list** »
- 7 – Create a new project

The MODBUS Slave Millenium is configured in the MIIWEB MODBUS master Web Server, and now you can start to construct monitoring web pages, to make MODBUS gateways and to do archiving.

Procedure (Continued) :

- 8 – Create your project
- 9 – Click on « Compile and transfer into MIIWEB », then click on « **Transfer to MIIWEB** »
- 10 – Click on « **Auto-search on the local network** » to identify the MIIWEB to be configured
- 11 – Choose the MIIWEB by clicking on the corresponding line
- 12 – Click on « **Transfer the files** »

4.3 Address of the MODBUS Data Words

4.3.1 XC03 Module Words

a – Write word

MODBUS Address in the Millenium	Corresponding Address on the MODBUS Network
I1XC .. I8XC : b0, b1, b2, b3, b4, b5, b6, b7, b8	0 : b0, b1, b2, b3, b4, b5, b6, b7, b8
I9XC : 16-bit word	1
I10XC : 16-bit word	2
I11XC : 16-bit word	3

b – Read word

MODBUS Address in the Millenium	Corresponding Address on the MODBUS Network
O1XC O8XC : b0, b1, b2, b3, b4, b5, b6, b7, b8	10 : b0, b1, b2, b3, b4, b5, b6, b7, b8
O9XC : 16-bit word	11
O10XC : 16-bit word	12
O11XC : 16-bit word	13

4.3.2 XC04 Module Words

a – Write word

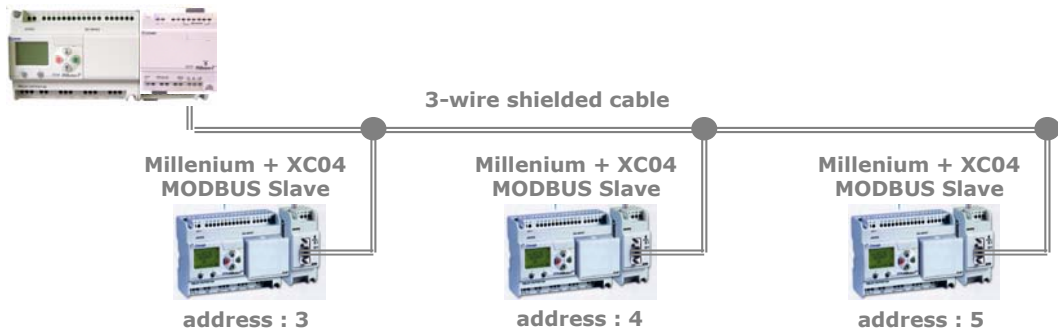
MODBUS Address in the Millenium	Corresponding Address on the MODBUS Network
I1XC .. I8XC : b0, b1, b2, b3, b4, b5, b6, b7, b8	0 : b0, b1, b2, b3, b4, b5, b6, b7, b8
I9XC : 16-bit word	1
I10XC : 16-bit word	2
I11XC : 16-bit word	3

b – Read word

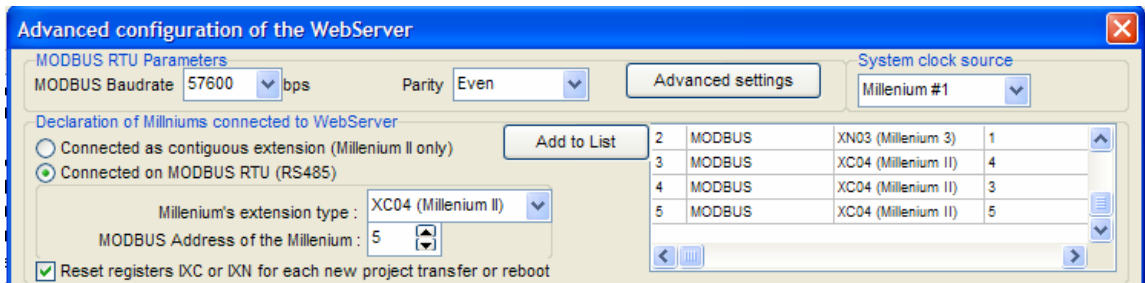
MODBUS Address in the Millenium	Corresponding Address on the MODBUS Network
O1XC O8XC : b0, b1, b2, b3, b4, b5, b6, b7, b8	4 : b0, b1, b2, b3, b4, b5, b6, b7, b8
O9XC : 16-bit word	5
O10XC : 16-bit word	6
O11XC : 16-bit word	7

4.4 Example of a MODBUS Network Configuration with a TCP/IP WEB Gateway

MII + MIIWEB : MODBUS master web server controller

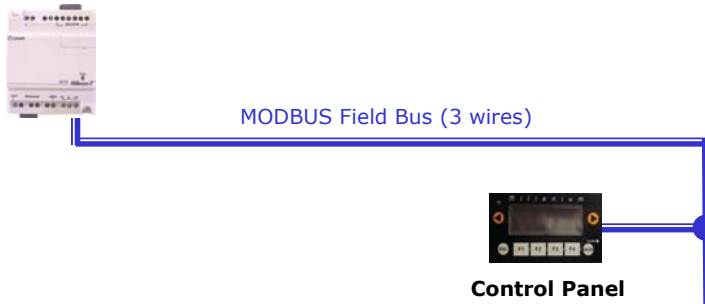


From the eTice_Soft program's main menu bar, click on the « Tools » tab, then on « Configure the WebServer»



5 – « Millenium Display » MODBUS Slave Control Panel

5.1 Connection

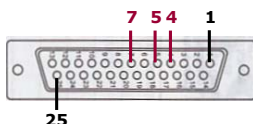
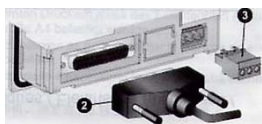


WARNING, only MODBUS slave control panels are compatible with the MIIWEB MODBUS master Web Server. The two compatible products are :

- CROUZET Part Number : 88 950 401 or Télémécanique P/N : XBT N401
- CROUZET Part Number : 88 950 402 or Télémécanique P/N : XBT NU400

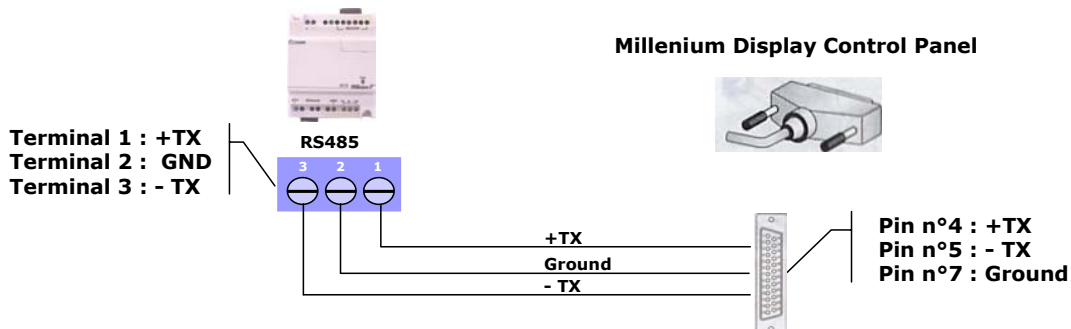
The MODBUS bus connection between the MIIWEB MODBUS master and an MODBUS Slave control panel is achieved using a shielded 3-wire cable so as to connect the ground, TX+ and TX-

a - First, connect the DB 25 socket to the operator display using a DB 25 cable on one end and 3 stripped wires on the other end.



Serial RS485 link:
Pin n°4 : Output A : +TX
Pin n°5 : Input B : - TX
Pin n°7 : Ground : 0V

b - Connect the MODBUS communication between MIIWEB and the control panel using a cable fitted with a DB25 connector at one end and 3 stripped wires at the other end (be sure to comply with the DB 25 pin assignment).



5.2 Configuration

5.2.1 Configuring the MIIWEB

For all MODBUS slaves compatible with MIIWEB (except for the Milleniums), there is no need to configure the MIIWEB MODBUS master Web Server.

5.2.2 Configuring the Control Panel

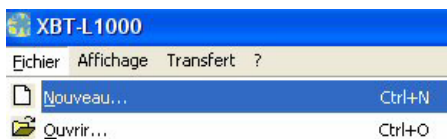
The control panels are configured from the XBT LIGHT software

WARNING, Check that the control panel effectively has the « MODBUS Slave » driver.

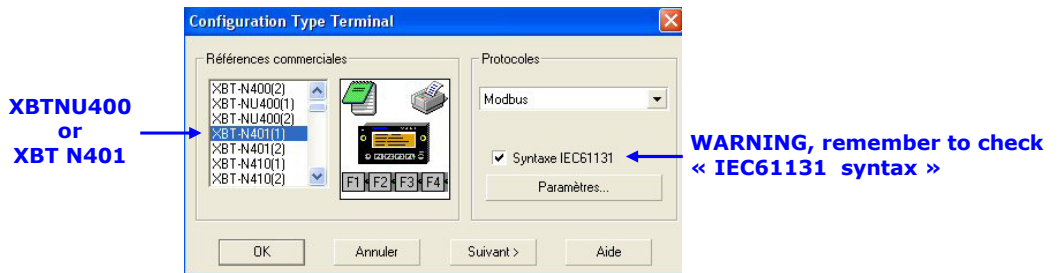
From the « **XBT LIGHT 4.4** » software **only**, proceed as follows :

Procedure :

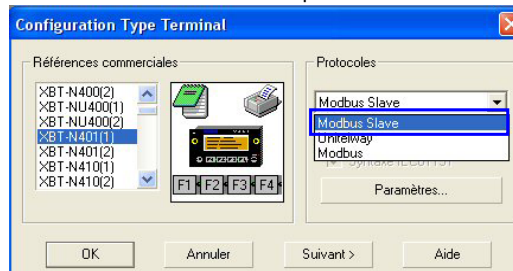
1 - Click on the « File » tab, then on « New »



2 – Select 1 of the 2 compatible panels



3 – Select the driver for the « MODBUS SLAVE » panel

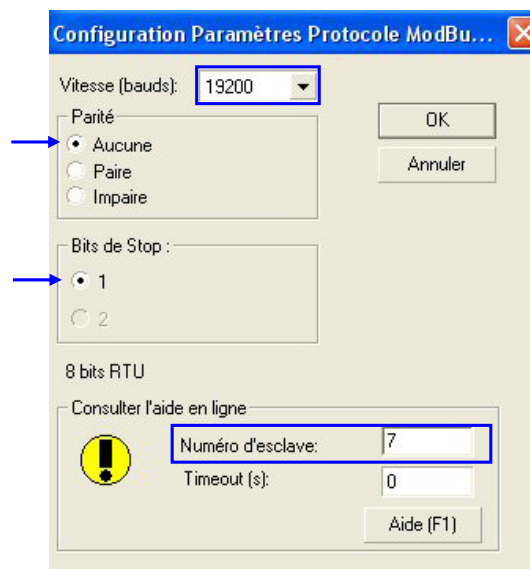


4 – Fill in the MODBUS parameters

Enter the following items :

- Transmission (or data flow) rate : 19200
- Stop bit : 1
- Parity : None
- the address of the MODBUS Slave (for example 7)

Click on « Parameters » to display the following configuration window :



Click on OK to validate the parameters.

5.3 Addresses of the MODBUS Data Words

The MODBUS communication words for the panel correspond directly to the words used by the programs for the automation devices.

There is no read or write word, since each word can be used as read or write.

MODBUS Address in the Panel	Corresponding Address on the MODBUS Network
mw0	0
mw99	99
mwxxx	xxx
mw3000	3000

6 – « Millenium 3 » MODBUS Slave Logic Controller

6.1 MODBUS Extension Module for Millenium 3 XD10/XD26

6.1.1 Connection

The entire XT range of « Millenium 3 » logic controllers can communicate on the MODBUS network from the following adjacent MODBUS extensions :

- MODBUS XN03 module
- MODBUS XN06 module

The XN03 or XN06 extension is connected to the lateral adjacent extension on the « Millenium 3 » logic controllers in the **XD range ONLY** via a pin connector.



6.1.2 Configuring the Logic Controller

From the « **Crouzet Software M3** », proceed as follows :

Procedure :

1 – Click on « New »



2 – Click on the image « Millenium 3 XD26 or XD10»

3 – Choose the Millenium 3 reference in the list

Choix du type de contrôleur :

Type	Référence	Entrées	Sorties
XD26 24VDC	88970161	10 TOR + 6 (0-10V)	10 RELAIS
XD26S 24VDC	88970162	10 TOR + 6 (0-10V)	10 TOR STATIQUE
XD26 24VAC	88970164	16 TOR	10 RELAIS
XD26 230VAC	88970163	16 TOR	10 RELAIS
XD26 12VDC	88970165	10 TOR + 6 (0-10V)	10 RELAIS

4 – Select the « **XN** » adjacent extension needed

Choix des extensions associées

Extensions compatibles

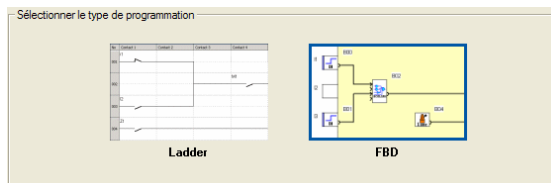
Type	Référence	Entrées	Sorties
XR06 24VDC	88970211	4 TOR	2 RELAIS
XR10 24VDC	88970221	6 TOR	4 RELAIS
XR14 24VDC	88970231	8 TOR	6 RELAIS
XN03 24VDC	88970250	4 ENTIERS	4 ENTIERS
XN05 24VDC	88970270	8 ENTIERS	8 ENTIERS
XA04 24VDC	88970241	2 ANALOG 10 BITS	2 ANALOG 10 BITS
XE 10 24VDC	88970321	6 TOR	4 SORTIES
M3MOD	88970117	AUCUN	AUCUN

Ajouter Supprimer

5 – Click on « **XN03 MODBUS 24VDC or XN06 MODBUS 24VDC** »

XR14 24VDC	88970231	8 TOR	6 RELAIS
XN03 24VDC	88970250	4 ENTIERS	4 ENTIERS
XN05 24VDC	88970270	8 ENTIERS	8 ENTIERS

6 – Click on « **add** » to validate the configuration and « **next** »



7 – Select « **FBD** » or « **LADDER** » then press « **next** », after, configure the MODBUS Module XN03 or XN06 according to the WebServer MODBUS settings :

Click on « **XN03 24VDC** »



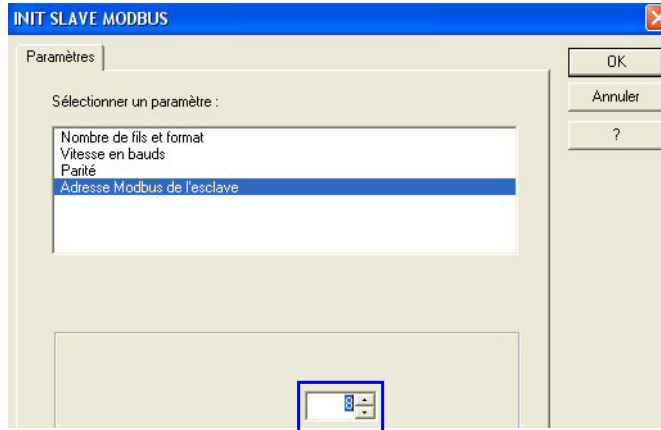
8 – Complete the following MODBUS parameters by selecting the following elements :

9 – Enter the « Number of wires and format » parameter : **2-wire RTU**

10 – Enter the « Baud rate » parameter : **19200**

11 – Enter the « Parity » parameter : **None**

12 – Configure the « MODBUS Slave Address » : example : 8



6.2 Connecting the Logic Controller to WebServer via MODBUS

MIIWEB



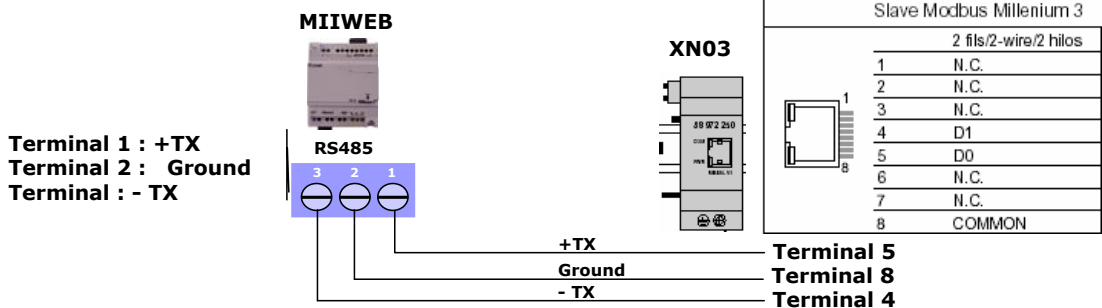
Field BUS MODBUS (3 - wires)



Millenium 3 + XN03 or XN06

6.2.1 Connecting from an XN03

The MODBUS bus connection between the WebServer MODBUS master and an XN03 MODBUS Slave is achieved using a shielded 3-wire cable so as to connect the ground, TX+ and TX- (see wiring below)



- 8 – Create your project
- 9 – Click on « Compile and transfer into MIIWEB », then click on « **Transfer to MIIWEB** »
- 10 – Click on « **Auto-search on the local network** » to identify the MIIWEB to be configured
- 11 – Choose the MIIWEB by clicking on the corresponding line
- 12 – Click on « **Transfer the files** »

6.3 MODBUS Address words

6.3.1 XN03 Data words

a – Write words

MODBUS Name in the Millenium	Address in the Slave (decimal)
I1XN : 16 bits word	16
I2XN : 16 bits word	17
I3XN : 16 bits word	18
I4XN : 16 bits word	19

b – Read words

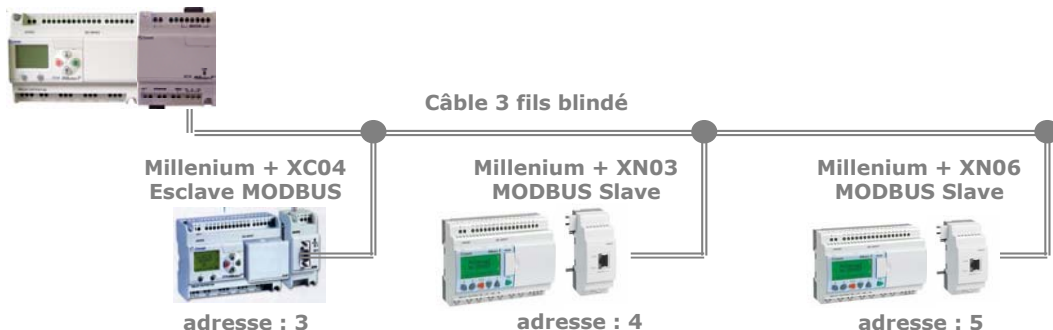
MODBUS Name in the Millenium	Address in the Slave (decimal)
O1XN : 16 bits word	20
O2XN : 16 bits word	21
O3XN : 16 bits word	22
O4XN : 16 bits word	23

6.3.2 XN06 Data words

Read words		Write words	
Millenium 3 Name	Register Address	Millenium 3 Name	Register Address
O1XN : 16 bits word	24	I1XN : 16 bits word	16
O2XN : 16 bits word	25	I2XN : 16 bits word	17
O3XN : 16 bits word	26	I3XN : 16 bits word	18
O4XN : 16 bits word	27	I4XN : 16 bits word	19
O5XN : 16 bits word	28	I5XN : 16 bits word	20
O6XN : 16 bits word	29	I6XN : 16 bits word	21
O7XN : 16 bits word	30	I7XN : 16 bits word	22
O8XN : 16 bits word	31	I8XN : 16 bits word	23

6.4 Example

MII + WebServer : MODBUS RTU Master



From the eTice_Soft program's main menu bar, click on the « Tools » tab, then on « Configure the WebServer»

Advanced configuration of the WebServer

MODBUS RTU Parameters
 MODBUS Baudrate: 57600 bps Parity: Even Advanced settings

System clock source: Millenium #1

Declaration of Milleniums connected to WebServer

☐ Connected as contiguous extension (Millenium II only)

☒ Connected on MODBUS RTU (RS485)

Millenium's extension type: XN06 (Millenium 3)

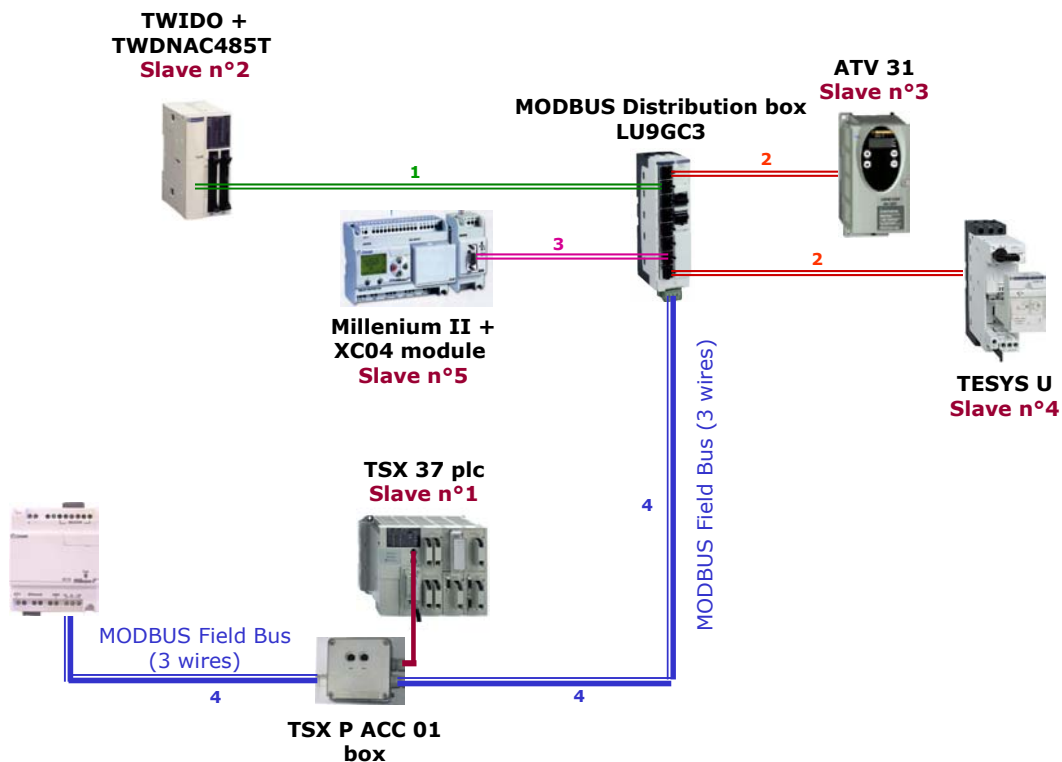
MODBUS Address of the Millenium: 5

☒ Reset registers IXC or IXN for each new project transfer or reboot

Id	Connecté à	Type	Adresse
1	EXTENSION	Millenium II	
2	MODBUS	XC04 (Millenium II)	3
3	MODBUS	XN03 (Millenium 3)	4
4	MODBUS	XN06 (Millenium 3)	5

6 – Appendices

Example of wiring for a MODBUS network using M2WEB and distribution box LU9GC3



Wiring hardware nomenclature :

- **Connection n°1** : cable with an RJ45 connector on one end and 3 stripped wires on the other (Télémécanique P/N : VW3A8306D30)
- **Connection n°2** : cable with an RJ45 connector at both ends (Télémécanique P/N : VW3A8306R10)
- **Connection n°3** : cable with a DB9 connector on one end and an RJ45 connector at the other
- **Connection n°4** : shielded 3-wire cable