

## Millenium Controllers

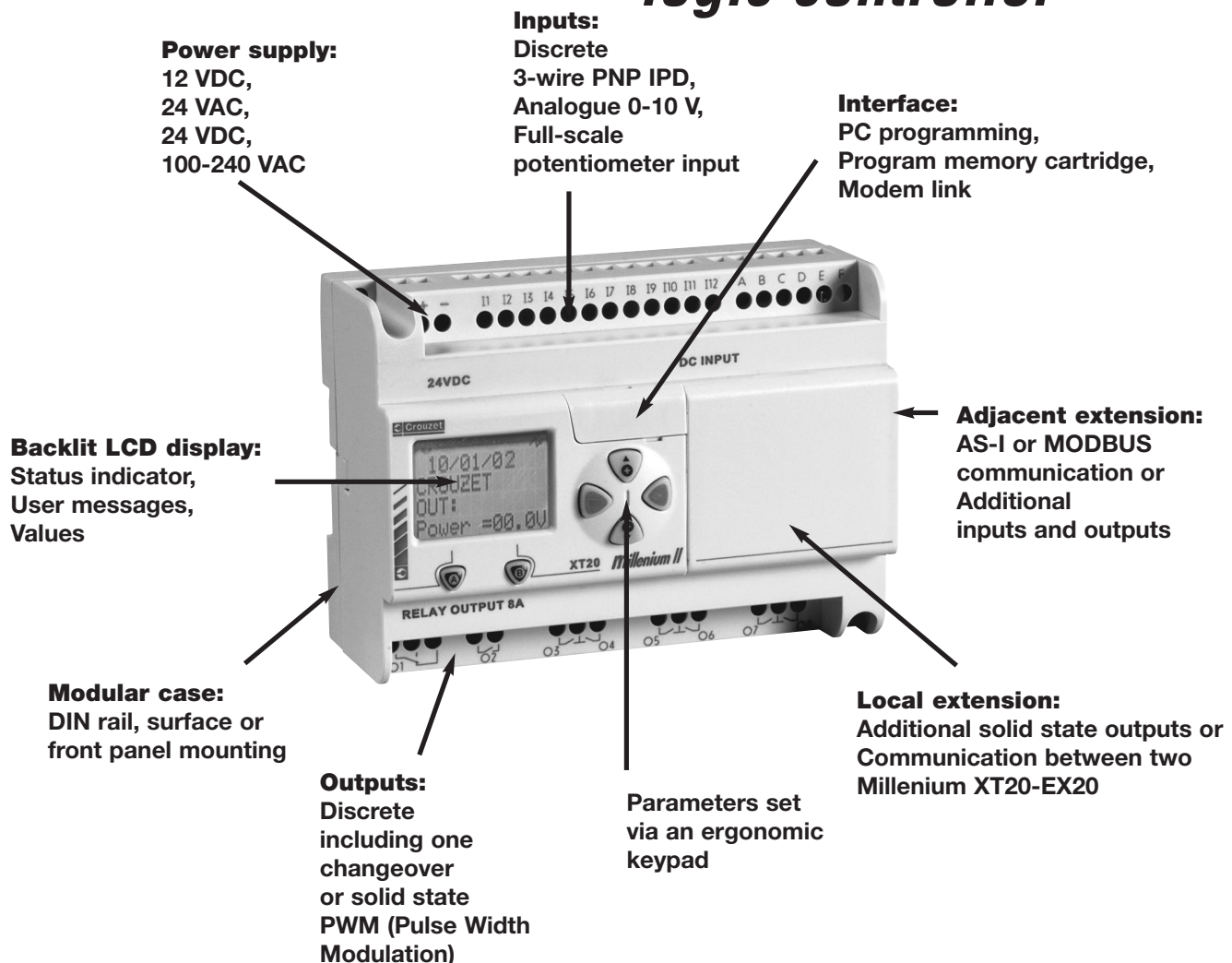


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# Millenium II+

## logic controller



### Your open, adaptable configuration

Millenium 2 consists of a complete range with versions which are:

- user-definable from the front panel
- low-cost (no displays and parameter-setting buttons)
- bare boards for mass-production applications
- numerous extensions (I/O, communication, etc)

### Your pre-programmed functions

Millenium 2 incorporates the most extensive function library on the market, which now includes application-specific functions (calculation, pump rotation, Cam timer, etc). Moreover, Crouzet will offer to design the function which is perfect for your application.

### Your flexibility for programming

Millenium 2 is the only logic controller to combine flexible programming using function blocks with the added benefit of sequential flow chart blocks. Its user-oriented design simplifies the process of designing your programs.

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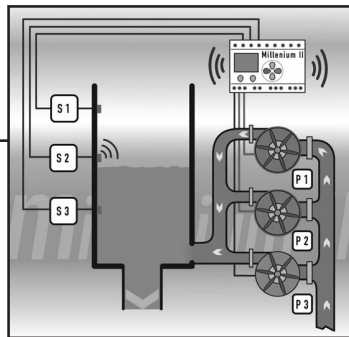
# Your applications already pre-programmed with our application-specific functions!

CROUZET offers you a library of application-specific functions which can be added to according to your requirements:

- **Calculation function**  
Multiplication/Division  
Addition/Subtraction
- **Data archiving function**
- **Cam timer function**
- **Clock function with parameter modification**
- **Pump rotation function**
- **Up/down counter with calculation function**

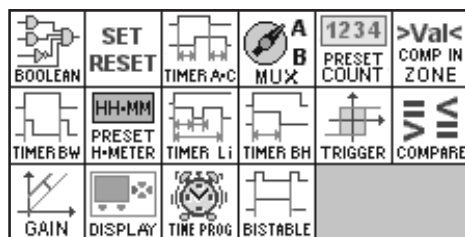
## Example of application-specific function: Rotation of 3 pumps

The pump rotation function is used to manage the water level in a tank by means of 3 sensors and 3 pumps.



## Function toolbar

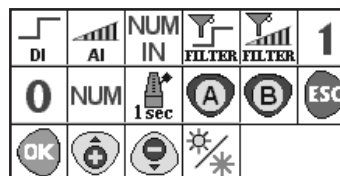
### ► FBD functions



21 pre-programmed functions are available for counting, timing, comparison, multiplexing, timer programming and display.

	<b>BOOLEAN</b> Used to create logic equations between connected inputs.		<b>TIMER Li</b> Pulse generator (ON setting, OFF setting).
	<b>SET - RESET</b> Bistable memory - Priority assigned to either SET or RESET.		<b>TIMER B/H</b> Timer. Function BH. (adjustable impulse signal).
	<b>TIMER A/C</b> Timer - Function A/C (On-delay and off-delay).		<b>TRIGGER</b> Defines an activation zone with Hysteresis.
	<b>MUX</b> Multiplexing functions on 2 analogue values.		<b>COMPARE</b> Comparison of 2 analogue values using =, >, <, ≥, ≤ operators.
	<b>PRESET COUNT</b> Up/down counter.		<b>GAIN</b> Used to convert an analogue value by changing scale and offset.
	<b>COMP IN ZONE</b> Zone comparison (MIN ≤ VALEUR ≤ MAX).		<b>DISPLAY</b> Display of digital and analogue data, date, time, messages for man-machine interface.
	<b>TIMER BW</b> Timer - Function BW (impulse on a rising or falling edge).		<b>TIME PROG</b> Hourly, weekly and annual programmer.
	<b>PRESET H-METER</b> Hour counter (presetting of hour, minute).		<b>BISTABLE</b> Impulse relay function.

### ► Inputs



You can connect physical inputs, whether discrete, analogue or potentiometer. There are also internal inputs such as the keypad, constants, etc.

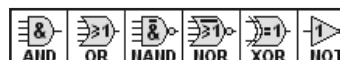
### ► Outputs



You have two types of output:

- physical: discrete, solid state with PWM (Pulse Width Modulation),
- internal: display backlighting.

### ► Logic functions



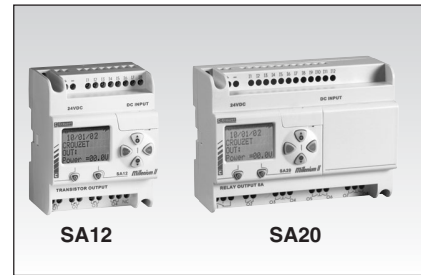
AND, OR, NAND, NOR, XOR, NOT functions.

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Standard versions

- Intuitive programming via function block (FBD) or grafcet (SFC)
- Function: timing, counting, etc
- Application-specific functions: rotation, cam timers, calculation, etc.
- Discrete, analogue or potentiometer inputs
- Relay or solid state with PWM outputs
- Backlit LCD display
- Program protected by a password
- Calendar program clock
- User-definable from the front panel



Type	Input	Output	Power supply	Part Number
SA12	8	4 relay	24 VDC	88 950 041
	8	4 relay	100 - 240 VAC	88 950 043
	8	4 relay	24 VAC	88 950 044
	8	4 solid state/4 PWM	24 VDC	88 950 042
	8 NPN	4 relay	24 VDC	88 950 049
	8	4 relay	12 VDC	88 950 045
SA20	8	4 solid state/4 PWM	12 VDC	88 950 046
	12	8 relay	24 VDC	88 950 051
	12	8 relay	100 - 240 VAC	88 950 053
	12	8 relay	24 VAC	88 950 054
	12	8 solid state/6 PWM	24 VDC	88 950 052
	12 NPN	8 relay	12 VDC	88 950 059
	12	8 relay	12 VDC	88 950 055
	12	8 solid state/6 PWM	12 VDC	88 950 056

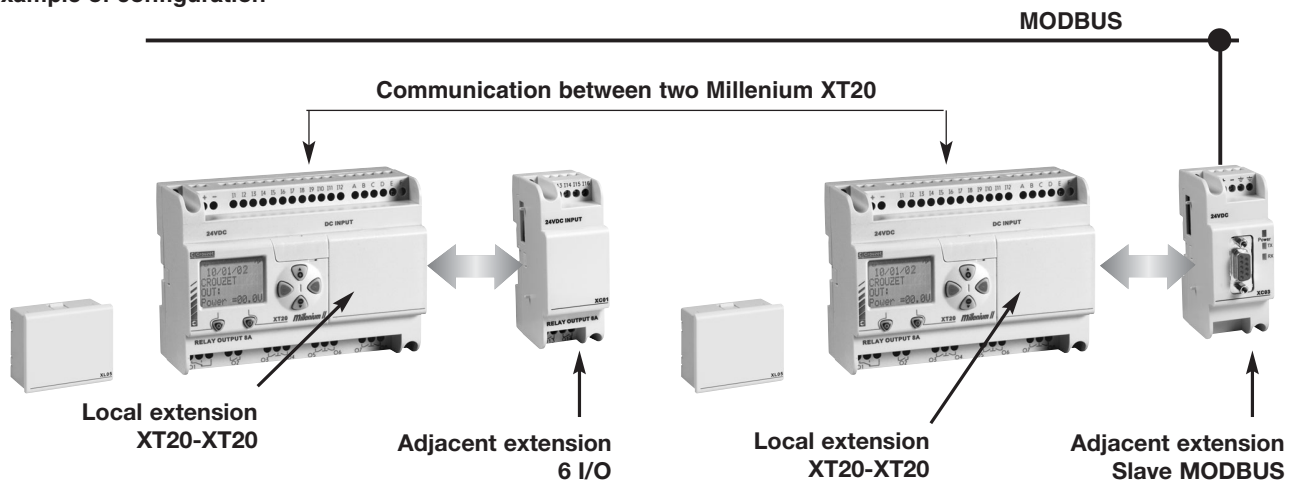
Expandable version

- Expandable: communication, inputs/outputs, etc
- Intuitive programming via function block (FBD) or grafcet (SFC)
- Function: timing, counting, etc
- Application-specific functions: load rotation, cam timers, calculation, etc.
- Discrete, analogue or potentiometer inputs
- Relay or solid state with PWM outputs
- Backlit LCD display
- Program protected by a password
- Calendar program clock
- User-definable from the front panel
- Can take an XC adjacent extension and an XL local extension



Type	Input	Output	Power supply	Part Number
XT20	12	8 relay	24 VDC	88 950 061
	12	8 relay	100 - 240 VAC	88 950 063
	12	8 relay	24 VAC	88 950 064
	12	8 solid state/6 PWM	24 VDC	88 950 062
	12 NPN	8 relay	24 VDC	88 950 069
	12	8 relay	12 VDC	88 950 065
	12	8 solid state/6 PWM	12 VDC	88 950 066

Example of configuration



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Expandable Economy

- Performs the same as the XT 20 but without the Display or the Front Panel
- Ideal for use in applications where modifications of the parameters from the front panel is not a requirement



Type	Input	Output	Power supply	Part Number
EX20	12 PNP	8 relay	24 VDC	88 950 831
	12	8 relay	110 - 240 VAC	88 950 833
	12	8 relay	24 VAC	88 950 834
	12 PNP	8 solid state	24 VDC	88 950 832
	12 NPN	8 relay	24 VDC	88 950 839

Local extensions

- For EX & XT 20 only (1 local extension per module)
- Millenium – Millenium local link
- Doubles the hardware and software capacities
- Transparent communication between 2 EX & XT 20
- Max. distance between 2 EX & XT 20: 10 meters
- Cable type: screened twisted pair
- 4 Solid State Outputs on XL05



Type	Description	Part Number
XL01	M2 – M2 local link (2 modules)	88 950 200
XL05	4 solid state outputs	88 950 204
XL06	2 relays	88 950 810

Adjacent extensions

- For use with XT 20 Models (one adjacent extension per module)
- Communication using MODBUS or AS-i protocol (Slave module)
- 6 additional inputs/outputs on XC03



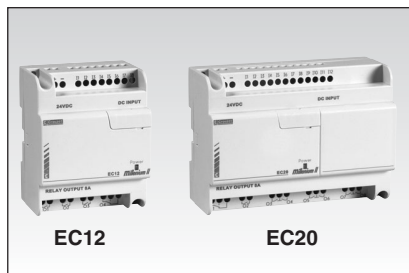
Type	Description	Part Number
XC01	4 inputs 2 relay outputs	24 VDC
	4 inputs 2 relay outputs	24 VAC
	4 inputs 2 relay outputs	110 - 240 VAC
	4 inputs 2 relay outputs	12 VDC
	4 NPN inputs 2 relay outputs	12 VDC
XC02	AS-i exchange unit	24 VDC
XC03	MODBUS exchange unit	24 VDC
Modems	RTC	88 950 106
	GSM	88 950 107

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Economy versions

- No display or parameter-setting buttons
- Intuitive programming via function block (FBD) or grafcet (SFC)
- Function: timing, counting, etc
- Application-specific functions: load rotation, cam timers, calculation, etc.
- Discrete, analogue or potentiometer inputs
- Relay or solid state with PWM outputs
- Program protected by a password
- Calendar program clock



Type	Input	Output	Power supply	Part Number
EC12	8	4 relay	24 VDC	88 950 021
	8	4 relay	100 - 240 VAC	88 950 023
	8	4 relay	24 VAC	88 950 024
	8	4 solid state/4 PWM	24 VDC	88 950 022
	8 NPN	4 relay	24 VDC	88 950 031
	8	4 relay	12 VDC	88 950 032
EC20	12	8 relay	24 VDC	88 950 031
	12	8 relay	100 - 240 VAC	88 950 033
	12	8 relay	24 VAC	88 950 034
	12	8 solid state/6 PWM	24 VDC	88 950 032
	12 NPN	8 relay	24 VDC	88 950 039
	12	8 relay	12 VDC	88 950 035
	12	8 solid state/6 PWM	12 VDC	88 950 036

Starter kit

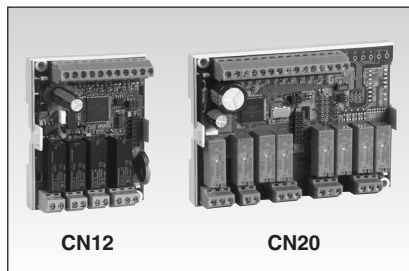
- Each kit includes:
  - a standard or expandable Millenium 2
  - a PC/Millenium 2 link interface
  - an interactive CD-Rom including the software workshop, tutorial, application library and technical brochures



Type	Input	Output	Power supply	Part Number
KIT SA 12	8	4 relay	24 VDC	88 950 070
	8	4 relay	100 - 240 VAC	88 950 071
KIT SA 20	12	8 relay	24 VDC	88 950 072
	12	8 relay	100 - 240 VAC	88 950 073
KIT XT 20	12	8 relay	24 VDC	88 950 074
	12	8 relay	100 - 240 VAC	88 950 075

Bare board versions

- For mass-production applications
- Intuitive programming via function block (FBD) or grafcet (SFC)
- Function: timing, counting, etc.
- Application-specific functions: load rotation, cam timers, calculation, etc.
- Discrete, analogue or potentiometer inputs
- Relay or solid state with PWM outputs
- Program protected by a password
- Calendar program clock



**Consult factory  
for availability.**

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