

## Processing characteristics of CB, CD, XD & XB product types

<b>LCD display</b>	CD, XD: Display with 4 lines of 18 characters
<b>Programming method</b>	Ladder or function blocks/SFC (Grafcet)
<b>Program size</b>	Ladder: 120 lines Function blocks: CB, CD: typically 350 blocks XB, XD: typically 700 blocks
<b>Program memory</b>	Flash EEPROM
<b>Removable memory</b>	EEPROM
<b>Data memory</b>	368 bits/200 words
<b>Back-up time in the event of power failure</b>	Program and settings in the controller: 10 years Program and settings in the plug-in memory: 10 years Data memory: 10 years
<b>Cycle time</b>	Ladder: typically 20 ms Function blocks: 6 → 90 ms
<b>Response time</b>	Input acquisition time + 1 to 2 cycle times
<b>Clock data retention</b>	10 years (lithium battery) at 25°C
<b>Clock drift</b>	Drift < 12 min/year (at 25°C) 6 s/month (at 25°C with user-definable correction of drift)
<b>Timer block accuracy</b>	1% ± 2 cycle times
<b>Start up time on power up</b>	< 1.2 s

## Characteristics of products with AC power supplied

Supply	24 V ~ (88970..4)	100 → 240 V ~ (88970..3)
<b>Nominal voltage</b> ●	24 V ~	100 → 240 V ~
<b>Operating limits</b> ●	-15% / +20% or 20.4 V ~ → 28.8 V ~	-15% / +10% or 85 V ~ → 264 V ~
<b>Supply frequency range</b>	50/60 Hz (+4% / -6%) or 47 → 53 Hz/57 → 63 Hz	50/60 Hz (+4% / -6%) or 47 → 53 Hz/57 → 63 Hz
<b>Immunity from micro power cuts</b>	10 ms (repetition 20 times)	10 ms (repetition 20 times)
<b>Max. absorbed power</b>	CB12-CD12-XD10-XB10: 4 VA CB20-CD20: 6 VA XD10 with extension - XD26-XB26: 7.5 VA XD26-XB26 with extension: 10 VA	CB12-CD12-XD10-XB10: 7 VA CB20-CD20: 11 VA XD10-XB10 with extension-XD26-XB26: 12 VA XD26-XB26 with extension: 17 VA
<b>Isolation voltage</b>	1780 V ~	1780 V ~
<b>Inputs</b>	24 V ~ (88970..4)	100 → 240 V ~ (88970..3)
<b>Input voltage</b> ●	24 V ~ (-15% / +20%)	100 → 240 V ~ (-15% / +10%)
<b>Input current</b> ●	4.4 mA @ 20.4 V ~ 5.2 mA @ 24.0 V ~ 6.3 mA @ 28.8 V ~	0.24 mA @ 85 V ~ 0.75 mA @ 264 V ~
<b>Input impedance</b> ●	4.6 kΩ	350 kΩ
<b>Logic 1 voltage threshold</b> ●	≥ 14 V ~	≥ 79 V ~
<b>Making current at logic state 1</b> ●	> 2 mA	> 0.17 mA
<b>Logic 0 voltage threshold</b> ●	≤ 5 V ~	≤ 20 V ~ (≤ 28 V ~ : XE10, XR06, XR10, XR14)
<b>Release current at logic state 0</b> ●	< 0.5 mA	< 0.5 mA
<b>Response time with LADDER programming</b>	50 ms - State 0 → 1 (50/60 Hz)	50 ms - State 0 < 1 (50/60 Hz)
<b>Response time with function blocks programming</b>	Configurable in increments of 10 ms 50 ms min. up to 255 ms State 0 → 1 (50/60 Hz)	Configurable in increments of 10 ms 50 ms min. up to 255 ms State 0 → 1 (50/60 Hz)
<b>Maximum counting frequency</b>	In accordance with cycle time (Tc) and input response time (Tr) : $1 / ((2 \times Tc) + Tr)$	In accordance with cycle time (Tc) and input response time (Tr) : $1 / ((2 \times Tc) + Tr)$
<b>Sensor type</b>	Contact or 3-wire PNP	Contact or 3-wire PNP
<b>Input type</b>	Resistive	Resistive
<b>Isolation between power supply and inputs</b>	None	None
<b>Isolation between inputs</b>	None	None
<b>Protection against polarity inversions</b>	Yes	Yes
<b>Status indicator</b>	On LCD screen for CD and XD	On LCD screen for CD and XD
<b>Characteristics of relay outputs common to the entire range</b>		
<b>Max. breaking voltage</b> ●	5 → 30 V ~ 24 → 250 V ~	
<b>Breaking current</b> ●	CB-CD-XB10-XD10-XR06-XR10: 8 A XD26-XB26: 8 x 8 A relays, 2 x 5 A relays XE10: 4 x 5 A relays XR14: 4 x 8 A relays, 2 x 5 A relays	
<b>Max. Output Common Current</b>	12A for O8, O9, OA	

● : For adapted products, see page page 64-65

# Millenium 3 Standard

Electrical durability for 500 000 operating cycles	Usage category DC-12: 24 V, 1.5 A Usage category DC-13: 24 V (L/R = 10 ms), 0.6 A Usage category AC-12: 230 V, 1.5 A Usage category AC-15: 230 V, 0.9 A
Minimum switching capacity	10 mA (at minimum voltage of 12 V)
Minimum load	12 V, 10 mA
Maximum rate	Off load: 10 Hz
Mechanical life	10.000.000 operations (cycles)
Voltage for withstanding shocks	In accordance with IEC/EN 60947-1 and IEC/EN 60664-1: 4 kV
Response time	Make 10 ms Release 5 ms
Built-in protections	Against short-circuits: None Against overvoltages and overloads: None
Status indicator	On LCD screen for CD and XD

## Characteristics of product with DC power supplied

Supply	12 V $\overline{\text{---}}$ (88970..5 & 88970814 & 88970840)	24 V $\overline{\text{---}}$ (88970..1 & 88970..2)
Nominal voltage ●	12 V $\overline{\text{---}}$	24 V $\overline{\text{---}}$
Operating limits ●	-13% / +20% or 10.4 V $\overline{\text{---}}$ < 14.4 V $\overline{\text{---}}$ (including ripple)	-20% / +25% or 19.2 V $\overline{\text{---}}$ < 30 V $\overline{\text{---}}$ (including ripple)
Immunity from micro power cuts	$\leq$ 1 ms (repetition 20 times)	$\leq$ 1 ms (repetition 20 times)
Max. absorbed power	CB12 with solid state outputs: 1.5 W CD12: 1.5 W CD20: 2.5 W XD26-XB26: 3 W XD26-XB26 with extension: 5 W XD26 with solid state outputs: 2.5 W	CB12-CD12-CD20 with solid state outputs - XD10-XB10 with solid state outputs: 3 W XD10-XB10 with relay outputs: 4 W XD26-XB26 with solid state outputs: 5 W CB20-CD20 with relay outputs-XD26 with relay outputs: 6 W XD10-XB10 with extension: 8 W XD26-XB26 with extension: 10 W
Protection against polarity inversions	Yes	Yes
Digital inputs (I1 to IA and IH to IY)	12 V $\overline{\text{---}}$ (88970..5 & 88970814 & 88970840)	24 V $\overline{\text{---}}$ (88970..1 & 88970..2)
Input voltage ●	12 V $\overline{\text{---}}$ (-13% / +20%)	24 V $\overline{\text{---}}$ (-20% / +25%)
Input current ●	3.9 mA @ 10.44 V $\overline{\text{---}}$ 4.4 mA @ 12.0 V $\overline{\text{---}}$ 5.3 mA @ 14.4 V $\overline{\text{---}}$	2.6 mA @ 19.2 V $\overline{\text{---}}$ 3.2 mA @ 24 V $\overline{\text{---}}$ 4.0 mA @ 30.0 V $\overline{\text{---}}$
Input impedance ●	2.7 k $\Omega$	7.4 k $\Omega$
Logic 1 voltage threshold ●	$\geq$ 7 V $\overline{\text{---}}$	$\geq$ 15 V $\overline{\text{---}}$
Making current at logic state 1 ●	$\geq$ 2 mA	$\geq$ 2.2 mA
Logic 0 voltage threshold ●	$\leq$ 3 V $\overline{\text{---}}$	$\leq$ 5 V $\overline{\text{---}}$
Release current at logic state 0 ●	<0.9 mA	<0.75 mA
Response time	1 $\rightarrow$ 2 cycle times	1 $\rightarrow$ 2 cycle times
Maximum counting frequency	I1 & I2: Ladder (1 kHz) & FBD (Up to 6 kHz) I3 to IA & IH to IY: in accordance with cycle time (Tc) and input response time (Tr) : 1/ ((2 x Tc) + Tr)	I1 & I2: Ladder (1 kHz) & FBD (Up to 6 kHz) I3 to IA & IH to IY: in accordance with cycle time (Tc) and input response time (Tr) : 1/ ((2 x Tc) + Tr)
Sensor type	Contact or 3-wire PNP	Contact or 3-wire PNP
Conforming to IEC/EN 61131-2	Type 1	Type 1
Input type	Resistive	Resistive
Isolation between power supply and inputs	None	None
Isolation between inputs	None	None
Protection against polarity inversions	Yes	Yes
Status indicator	On LCD screen for CD and XD	On LCD screen for CD and XD
Analogue or digital inputs (IB to IG)	12 V $\overline{\text{---}}$ (88970..5 & 88970814 & 88970840)	24 V $\overline{\text{---}}$ (88970..1 & 88970..2)
CB12-CD12-XD10-XB10	4 inputs IB $\rightarrow$ IE	4 inputs IB $\rightarrow$ IE
CB20-CD20-XB26-XD26	6 inputs IB $\rightarrow$ IG	6 inputs IB $\rightarrow$ IG
Inputs used as analogue inputs		
Measurement range ●	(0 $\rightarrow$ 10 V) or (0 $\rightarrow$ V power supply)	(0 $\rightarrow$ 10 V) or (0 $\rightarrow$ V power supply)
Input impedance ●	14 k $\Omega$	12 k $\Omega$
Input voltage ●	14.4 V $\overline{\text{---}}$ max	30 V $\overline{\text{---}}$ max
Value of LSB ●	14 mV, 4 mA	29 mV, 4 mA
Input type	Common mode	Common mode
Resolution	10 bit at maximum input voltage	10 bit at maximum input voltage
Conversion time	Controller cycle time	Controller cycle time
Accuracy at 25°C	$\pm$ 5%	$\pm$ 5%
Accuracy at 55°C	$\pm$ 6.2%	$\pm$ 6.2%
Repeat accuracy at 55 °C	$\pm$ 2%	$\pm$ 2%
Isolation between analogue channel and power supply	None	None
Cable length	10 m maximum, with shielded cable (sensor not isolated)	10 m maximum, with shielded cable (sensor not isolated)
Protection against polarity inversions	Yes	Yes

● :For adapted products, see page page 64-65

Potentiometer control	2.2 k $\Omega$ /0.5 W (recommended) 10 k $\Omega$ max.	2.2 k $\Omega$ /0.5 W (recommended) 10 k $\Omega$ max.
<b>Inputs used as digital inputs</b>		
Input voltage ●	12 V $\overline{\text{---}}$ (-13% / +20%)	24 V $\overline{\text{---}}$ (-20% / +25%)
Input current ●	0.7 mA @ 10.44 V $\overline{\text{---}}$ 0.9 mA @ 12.0 V $\overline{\text{---}}$ 1.0 mA @ 14.4V $\overline{\text{---}}$	1.6 mA @ 19.2 V $\overline{\text{---}}$ 2.0 mA @ 24.0 V $\overline{\text{---}}$ 2.5 mA @ 30.0 V $\overline{\text{---}}$
Input impedance ●	14 k $\Omega$	12 k $\Omega$
Logic 1 voltage threshold ●	$\geq 7$ V $\overline{\text{---}}$	$\geq 15$ V $\overline{\text{---}}$
Making current at logic state 1 ●	$\geq 0.5$ mA	$\geq 1.2$ mA
Logic 0 voltage threshold ●	$\leq 3$ V $\overline{\text{---}}$	$\leq 5$ V $\overline{\text{---}}$
Release current at logic state 0 ●	$\leq 0.2$ mA	$\leq 0.5$ mA
Response time	1 $\rightarrow$ 2 cycle times	1 $\rightarrow$ 2 cycle times
Maximum counting frequency	In accordance with cycle time (Tc) and input response time (Tr) : 1/ ( (2 x Tc) + Tr)	In accordance with cycle time (Tc) and input response time (Tr) : 1/ ( (2 x Tc) + Tr)
Sensor type	Contact or 3-wire PNP	Contact or 3-wire PNP
Conforming to IEC/EN 61131-2	Type 1	Type 1
Input type	Resistive	Resistive
Isolation between power supply and inputs	None	None
Isolation between inputs	None	None
Protection against polarity inversions	Yes	Yes
Status indicator	On LCD screen for CD and XD	On LCD screen for CD and XD
<b>Characteristics of relay outputs common to the entire range</b>		
Max. breaking voltage ●	5 $\rightarrow$ 30 V $\overline{\text{---}}$ 24 $\rightarrow$ 250 V $\sim$	
Breaking current ●	CB-CD-XD10-XB10-XR06-XR10: 8 A XD26-XB26: 8 x 8 A relays, 2 x 5 A relays XE10: 4 x 5 A relays XR14: 4 x 8 A relays, 2 x 5 A relays	
Max. Output Common Current	12A for O8,O9,OA	
Electrical durability for 500 000 operating cycles	Usage category DC-12: 24 V, 1.5 A Usage category DC-13: 24 V (L/R = 10 ms), 0.6 A Usage category AC-12: 230 V, 1.5 A Usage category AC-15: 230 V, 0.9 A	
Minimum switching capacity	10 mA (at minimum voltage of 12 V)	
Minimum load	12 V, 10 mA	
Maximum rate	Off load: 10 Hz At operating current: 0.1 Hz	
Mechanical life	10.000.000 operations (cycles)	
Voltage for withstanding shocks	In accordance with IEC/EN 60947-1 and IEC/EN 60664-1: 4 kV	
Response time	Make 10 ms Release 5 ms	
Built-in protections	Against short-circuits: None Against overvoltages and overloads: None	
Status indicator	On LCD screen for CD and XD	
Digital / PWM solid state output	<b>12-24 V <math>\overline{\text{---}}</math></b> <b>(88970814 &amp; 88970840)</b>	<b>24 V <math>\overline{\text{---}}</math></b> <b>(88970..2)</b>
PWM solid state output*	CB12: O4 XD26: O4 $\rightarrow$ O7	CD12-XD10-XB10: O4 CD20-XD26-XB26: O4 $\rightarrow$ O7
* Only available with "FBD" programming language		
Breaking voltage ●	10.4 $\rightarrow$ 30 V $\overline{\text{---}}$	19.2 $\rightarrow$ 30 V $\overline{\text{---}}$
Nominal voltage ●	12-24 V $\overline{\text{---}}$	24 V $\overline{\text{---}}$
Nominal current ●	0.5 A	0.5 A
Max. breaking current ●	0.625 A	0.625 A
Voltage drop	$\leq 2$ V for I = 0.5 A (at state 1)	$\leq 2$ V for I = 0.5 A (at state 1)
Response time	Make $\leq 1$ ms Release $\leq 1$ ms	Make $\leq 1$ ms Release $\leq 1$ ms
Built-in protections	Against overloads and short-circuits: Yes Against overvoltages (*) : Yes Against inversions of power supply: Yes	Against overloads and short-circuits: Yes Against overvoltages (*) : Yes Against inversions of power supply: Yes
(*) In the absence of a volt-free contact between the output of the logic controller and the load		
Min. load	1 mA	1 mA
Maximum incandescent load	0.2 A / 12 V $\overline{\text{---}}$ 0.1 A / 24 V $\overline{\text{---}}$	0.1 A / 24 V $\overline{\text{---}}$
Galvanic isolation	No	No
PWM frequency	14.11 Hz - 56.45 Hz - 112.90 Hz - 225.80 Hz - 451.59 Hz - 1806.37 Hz	14.11 Hz - 56.45 Hz - 112.90 Hz - 225.80 Hz - 451.59 Hz - 1806.37 Hz
PWM cyclic ratio	0 $\rightarrow$ 100% (256 steps for CD, XD and 1024 for XA)	0 $\rightarrow$ 100% (256 steps for CD, XD and 1024 for XA)
PWM accuracy at 120 Hz	$< 5\%$ (20% $\rightarrow$ 80%) load at 10 mA	$< 5\%$ (20% $\rightarrow$ 80%) load at 10 mA
PWM accuracy at 500 Hz	$< 10\%$ (20% $\rightarrow$ 80%) load at 10 mA	$< 10\%$ (20% $\rightarrow$ 80%) load at 10 mA
Status indicator	On LCD screen for XD	On LCD screen for CD and XD

● :For adapted products, see page page 64-65

# “Expandable” range selection guide

Modem communication solutions			Modular power supplies <sup>(1)</sup>					Starter kits
M3MOD	STN	GSM	12 V DC - 24 W	24 V DC - 7.5 W	24 V DC - 15 W	24 V DC - 30 W	24 V DC - 60 W	
88970117	88970118	88970119	88950306 <b>NEW</b>	88950303 <b>NEW</b>	88950304 <b>NEW</b>	88950307 <b>NEW</b>	88950302	Expandable
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<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	88970085
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- Compatible
- Mounted with the M3MOD:
  - STN modem,
  - or GSM modem

<sup>(1)</sup> Find the whole “Power Supplies” offer on pages 58-59.

## Termination extensions

Type	Part number	Power supply	Inputs	Outputs	
<b>Digital</b>					
	<b>XR06</b>	88970211	Via the 24 V $\overline{\text{DC}}$ controller	4 digital	2 x 8 A relays
		88970213	Via the 100 $\rightarrow$ 240 V $\sim$ controller	4 digital	2 x 8 A relays
		88970214	Via the 24 V $\sim$ controller	4 digital	2 x 8 A relays
		88970215	Via the 12 V $\overline{\text{DC}}$ controller	4 digital	2 x 8 A relays
	<b>XR10</b>	88970221	Via the 24 V $\overline{\text{DC}}$ controller	6 digital	4 x 8 A relays
		88970223	Via the 100 $\rightarrow$ 240 V $\sim$ controller	6 digital	4 x 8 A relays
		88970224	Via the 24 V $\sim$ controller	6 digital	4 x 8 A relays
		88970225	Via the 12 V $\overline{\text{DC}}$ controller	6 digital	4 x 8 A relays
	<b>XR14</b>	88970231	Via the 24 V $\overline{\text{DC}}$ controller	8 digital	6 relays, of which 4 are 8 A and 2 are 5 A
		88970233	Via the 100 $\rightarrow$ 240 V $\sim$ controller	8 digital	6 relays, of which 4 are 8 A and 2 are 5 A
		88970234	Via the 24 V $\sim$ controller	8 digital	6 relays, of which 4 are 8 A and 2 are 5 A
		88970235	Via the 12 V $\overline{\text{DC}}$ controller	8 digital	6 relays, of which 4 are 8 A and 2 are 5 A
<b>Analogue</b>					
	<b>XA04</b>	88970241	Via the 24 V $\overline{\text{DC}}$ controller	1 analogue (0-10 V/0-20 mA), 1 analogue (0-10 V/0-20 mA/Pt100)	2 analogue (0-10 V)/PWM



### The 2 starter kits each contain:

- 1 XD26 logic controller + 1 USB link cable +
  - 1 M3 SOFT programming software application (CD-ROM) including a library of specific functions.
- Part no.: 88970084 / 88970085

# Millenium 3 Standard

## → Sandwich communication extensions for XD10/XB10 & XD26/XB26

- Exchange of input/output state or of internal values via communication networks
- Power supply via the controller



XN03



XN06



XN05

### Part numbers

Type	Description	Supply	Code
XN03	Modbus RS-485 slave communication extension 4 words	Via the 24 V $\overline{\text{DC}}$ controller	88970250
XN06	Modbus RS-485 slave communication extension 8 words	Via the 24 V $\overline{\text{DC}}$ controller	88972250
XN05	Ethernet protocol TCP Modbus extension	Via the 24 V $\overline{\text{DC}}$ controller	88970270

### Characteristics of communication extensions

General characteristics	88970250 & 88972250	88970270
See page 22, except:		
Certifications	UL, CSA, GL (UL, CSA: 88972250)	UL, CSA GL pending
Earthing	Yes, refer to the quick reference guide supplied with the product	Yes, refer to the quick reference guide supplied with the product
Operating temperature	-20 → +55°C (+40°C in a non-ventilated enclosure) in accordance with IEC/EN 60068-2-1 and IEC/EN 60068-2-2	0 → +55°C (+40°C in a non-ventilated enclosure) in accordance with IEC 60068-2-1 and IEC 60068-2-2
Cable length	Maximum length of the network: 1000 m (9600 Baud max, AWG26)	Maximum length between 2 controllers: 100 m

Communication parameters	88970250 & 88972250	88970270
Type of link	2 or 4-wire; RTU or ASCII	-
Transmission rate (Bauds)	1200, 2400, 4800, 9600, 19200, 28800, 38400, 57600	-
Parity	None; even; odd	-
Addressing	1 → 247	Static or dynamic

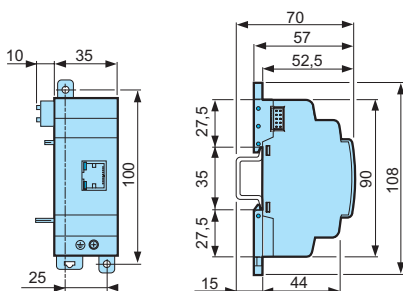
Characteristics of exchanges	88970250	88972250	88970270
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Programming with Ladder language	88970250	88972250	88970270
Image of smart relay I/O	4	4	-
Status	1	1	-

Programming with FBD language	88970250	88972250	88970270
Read	4	8	8
Read/Write	4	8	8
Clock words	4	12	4
Status words	1	1	1

### Dimensions (mm)

XN03 - XN05 - XN06



For adapted products, see page 64-65

## → Digital sandwich extension for XD10/XB10 and XD26/XB26

- Can be used to reach up to 50 inputs/outputs in conjunction with XR14 termination extensions
- Relay outputs one of which is a changeover relay



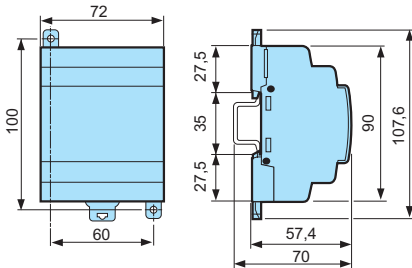
XE10

### Part numbers

Type	Input	Output	Supply	Code
XE10	6 digital	4 relays 5 A (1 of which is a changeover relay)	Via the 24 V $\square$ controller	88970321
	6 digital	4 relays 5 A (1 of which is a changeover relay)	100 → 240 V $\sim$	88970323
	6 digital	4 relays 5 A (1 of which is a changeover relay)	24 V $\sim$	88970324

### Dimensions (mm)

XE10



### Input / Output Connections

See Page 40-43 for details or to find instruction sheets visit: [www.millennium3.crouzet.com](http://www.millennium3.crouzet.com) in "Download"

For adapted products, see page page 64-65

# Millenium 3 Standard

## → Digital extension for XD10/XB10 and XD26/XB26

- Power supply via the controller at the same voltage as the inputs
- Number of inputs/outputs can be configured in accordance with your requirements



XR06

XR10

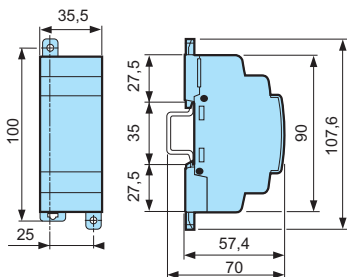
XR14

### Part numbers

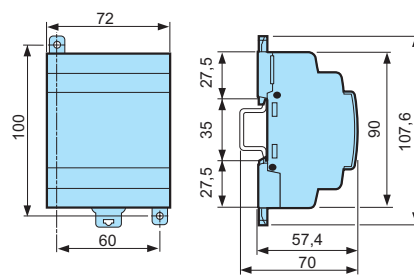
Type	Input	Output	Supply	Code
XR06	4 digital	2 relays 8 A	Via the 24 V $\overline{\text{---}}$ controller	88970211
	4 digital	2 relays 8 A	Via the 100 $\rightarrow$ 240 V $\sim$ controller	88970213
	4 digital	2 relays 8 A	Via the 24 V $\sim$ controller	88970214
	4 digital	2 relays 8 A	Via the 12 V $\overline{\text{---}}$ controller	88970215
XR10	6 digital	4 relays 8 A	Via the 24 V $\overline{\text{---}}$ controller	88970221
	6 digital	4 relays 8 A	Via the 100 $\rightarrow$ 240 V $\sim$ controller	88970223
	6 digital	4 relays 8 A	Via the 24 V $\sim$ controller	88970224
	6 digital	4 relays 8 A	Via the 12 V $\overline{\text{---}}$ controller	88970225
XR14	8 digital	6 relays (4 x 8 A relay and 2 x 5 A relay)	Via the 24 V $\overline{\text{---}}$ controller	88970231
	8 digital	6 relays (4 x 8 A relay and 2 x 5 A relay)	Via the 100 $\rightarrow$ 240 V $\sim$ controller	88970233
	8 digital	6 relays (4 x 8 A relay and 2 x 5 A relay)	Via the 24 V $\sim$ controller	88970234
	8 digital	6 relays (4 x 8 A relay and 2 x 5 A relay)	Via the 12 V $\overline{\text{---}}$ controller	88970235

### Dimensions (mm)

XR06



XR10 - XR14



### Input / Output Connections

See Page 40-43 for details or to find instruction sheets visit: [www.millenium3.crouzet.com](http://www.millenium3.crouzet.com) in "Download"

## → Analogue extension for XD10/XB10 and XD26/XB26

- Direct connection of analogue 0-10 V or 0-20 mA or Pt 100 inputs (10 bits) can be configured using the M3 SOFT
- 2 analogue 0-10 V or PWM outputs (10 bits) can be configured using the M3 SOFT software
- Ramp can be parameterised for outputs used as 0-10 V outputs
- Power supply via the controller



XA04

### Part numbers

Type	Input	Output	Supply	Code
XA04	1 analogue (0-10 V / 0-20 mA), 1 analogue (0-10 V / 0-20 mA / Pt100)	2 analogue (0-10 V) / PWM	Via the 24 V $\overline{\text{---}}$ controller	88970241

For adapted products, see page page 64-65

## Characteristics of analogue extension 88970241

### General characteristics of analogue extension 88970241

#### See page 22, except:

Certifications	UL, CSA GL (pending)
Earthing	Yes, refer to the quick reference guide supplied with the product

### Analogue inputs

Inputs used as analogue inputs	0-10 V	0-20 mA	Pt 100
Input	IP and IQ	IP and IQ	IQ
Input range	0 → 10 V ---	0 → 20 mA	-25 → 125°C
Input impedance	≥ 18 kΩ	246 Ω	-
Maximum non destructive current/voltage	30 V	30 mA	-
Value of LSB	9.8 mV	20 μA	0.15°C
Input type	Common mode	Common mode	Pt 100 probe - IEC 751 - 3-wire
Resolution	10 bits	10 bits	10 bits
Conversion time	Module cycle time	Module cycle time	Module cycle time
Accuracy at 25°C	± 1%	± 1%	±1.5°C
Accuracy at 55°C	± 1%	± 1%	±1.5°C
Isolation between analogue channel and power supply	None	None	None
Longueur câble	10 m maximum, with shielded cable (sensor not isolated)	10 m maximum, with shielded cable (sensor not isolated)	10 m maximum, with shielded cable (sensor not isolated)
Protection against polarity inversions	Command ignored	Command ignored	Command ignored

### Analogue outputs

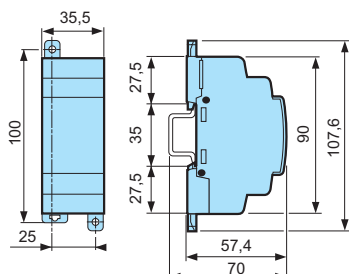
Range output	0 → 10 V
Input type	Resistive
Max. load	10 mA
Value of LSB	10 mV
Resolution	10 bits
Conversion time	Controller cycle time
Accuracy at 25°C	±1% of full scale
Accuracy at 55°C	±1% of full scale
Repeat accuracy at 55 °C	± 1%
Isolation between analogue channel and power supply	None
Cable length	10 metres maximum, with shielded cable (sensor not isolated)
Protection against polarity inversions	Yes

### PWM

Range output	V power supply
Max. load	≥ 1.2 kΩ (I ≤ 20 mA)
PWM cyclic ratio	1024 steps
Frequency	78 Hz, 312.5 Hz, 666.6 Hz, 1000 Hz, 1250 Hz, 1428 Hz, 1666 Hz, 2000 Hz
Accuracy	1% across the entire temperature range for PWM ratios from 5% to 95%
Built-in protections	Against overvoltages: Yes

## Dimensions (mm)

### XA04



## Input / Output Connections

See Page 40-43 for details or to find instruction sheets visit: [www.millennium3.crouzet.com](http://www.millennium3.crouzet.com) in "Download"

For adapted products, see page page 64-65



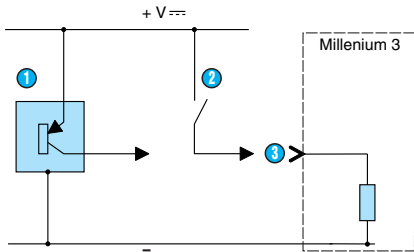
# Millenium 3 Standard

## → I/O wiring

### Inputs 12 V $\overline{\text{---}}$ , 24 V $\overline{\text{---}}$

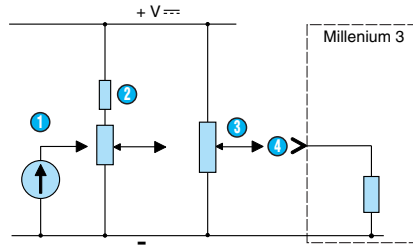
**Bases :** CD12, CD20, CB12, CB20, XD10, XD26, XB10, XB26

**Extensions :** XE10, XR06, XR10, XR14



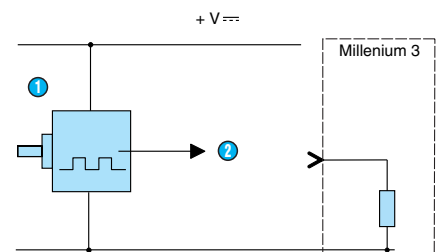
- ① 3-wire PNP sensor
- ② Contact
- ③ Digital input

**Bases :** CD12, CD20, CB12, CB20, XD10, XD26, XB10, XB26



- ① 0-10 V (input set to 0-10 V)
- ② Potentiometer type mounting (input set to 0-10 V)
- ③ Potentiometer (input set as a potentiometer)
- ④ Analogue input

**Bases :** CD12, CD20, CB12, CB20, XD10, XD26, XB10, XB26

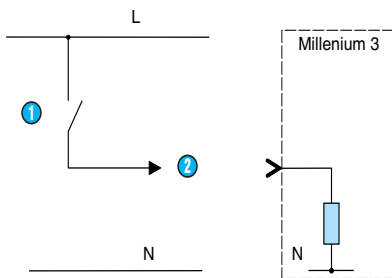


- ① Encoder
- ② High-speed digital input

### Inputs 100-240 V $\sim$ , 24 V $\sim$

**Bases :** CD12, CD20, CB12, CB20, XD10, XD26, XB10, XB26

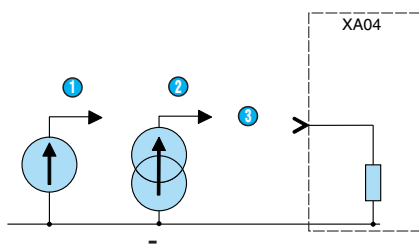
**Extensions :** XE10, XR06, XR10, XR14



- ① Contact
- ② Digital input

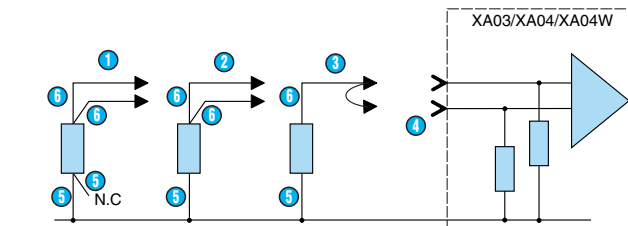
### Analogue inputs

**Extension :** XA04



- ① 0-10 V
- ② 0-20 mA
- ③ Analogue input

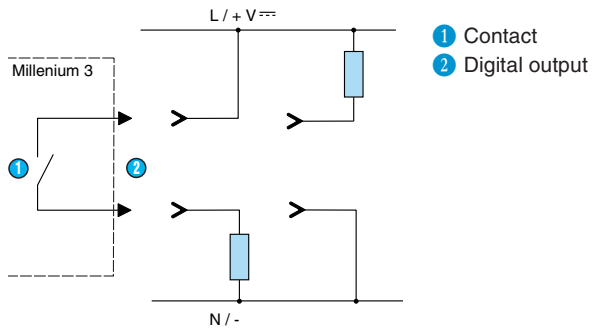
**Extension :** XA04



- ① Pt100 4-wire
- ② Pt100 3-wire
- ③ Pt100 2-wire
- ④ Analogue input
- ⑤ White
- ⑥ Red

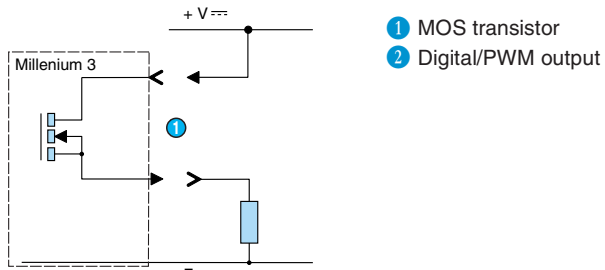
## Relay outputs

**Bases :** CD12, CD20, CB12, CB20, XD10, XD26, XB10, XB26  
**Extensions :** XE10, XR06, XR10, XR14



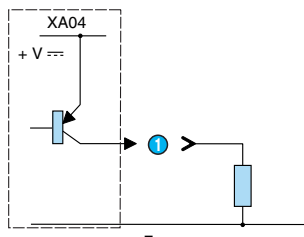
## Solid state outputs

**Bases :** CD12, CD20, CB12, CB20, XD10, XD26, XB10, XB26  
**Extensions :** XA04



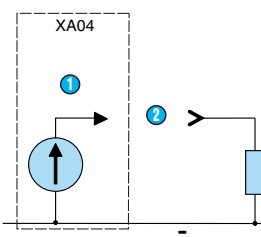
## Analogue outputs

**Extension :** XA04



1 PWM output

**Extension :** XA04



1 0-10 V  
 2 Analogue output

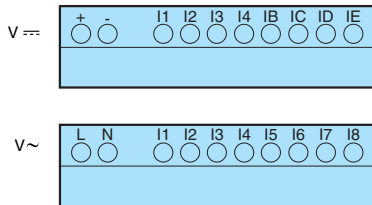
# Millenium 3 Standard

## → Input/output installations: Bases

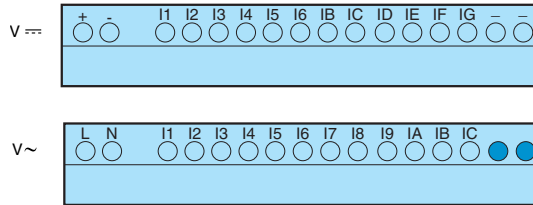
### "Compact" range : CD12, CD20, CB12, CB20

#### Inputs

CD12, CB12

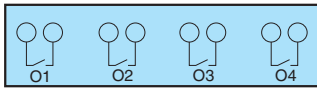


CD20, CB20

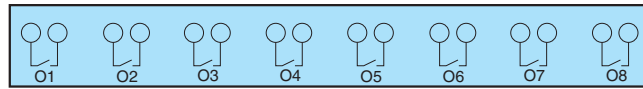


#### Relay outputs

CD12, CB12

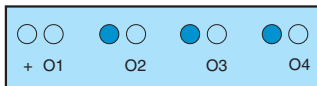


CD20, CB20

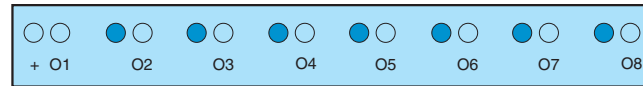


#### Solid state outputs

CD12, CB12



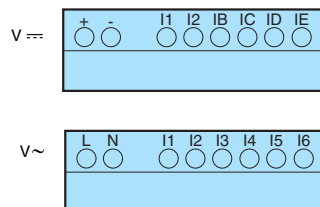
CD20



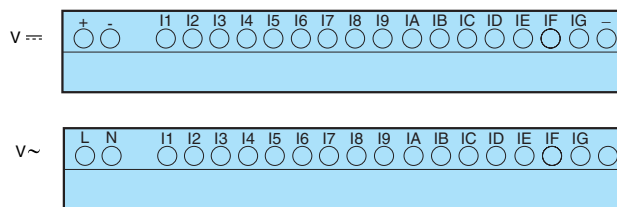
### "Expandable" range : XD10, XD26, XB10, XB26

#### Inputs

XD10, XB10

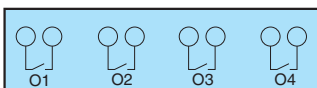


XD26, XB26

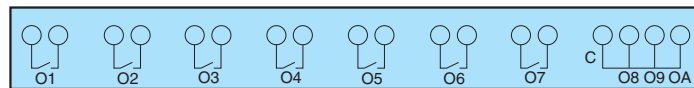


#### Relay outputs

XD10, XB10

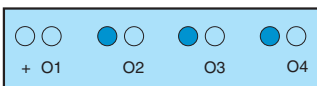


XD26, XB26



#### Solid state outputs

XD10



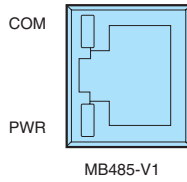
XD26



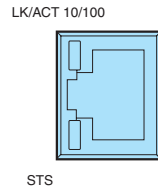
## → Input/output installations: Extensions

### "Sandwich" communication extensions : XN03, XN05, XN06

XN03, XN06

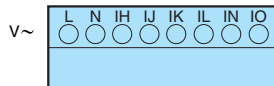
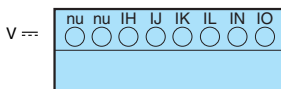


XN05

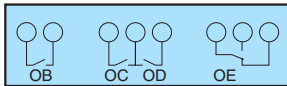


### Digital "Sandwich" extensions : XE10

#### Inputs



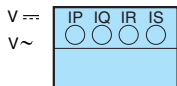
#### Relay outputs



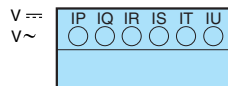
### Digital termination extensions : XR06, XR10, XR14

#### Inputs

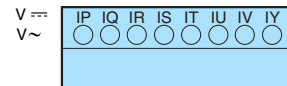
XR06



XR10

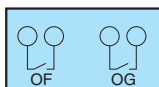


XR14

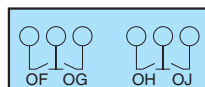


#### Relay outputs

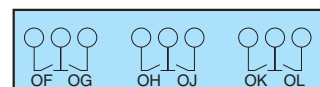
XR06



XR10

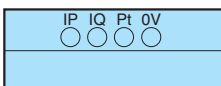


XR14



### Analogue termination extension : XA04

#### Inputs



#### Outputs

