

"Application-specific" and grouping adapted kits Kit 20 Part number 88970808



- Discover just what Millenium 3 can do for you its complete kits provide everything you need for your application
- Product groups: in order to facilitate logistics, we can supply groups of products

Part numbers

 Type
 Description

 88970808
 Kit 20
 CD20 - 24 V DC (Ref. 88970051) + 1 Power supply PS24-60 W (Ref. 88950302)

Specifications

Certifications	CE, UL, CSA except for 88 974 441 and 88 974 561 (Removable Block Terminal versions)
Conformity to standards (with the low voltage directive	IEC/EN 61131-2 (Open equipment)
and EMC directive)	IEC/EN 61131-2 (Zone B)
	IEC/EN 61000-6-2,
	IEC/EN 61000-6-3 (*)
	IEC/EN 61000-6-4 (*) Except configuration (99,070.4.4 or 99,070.4.2) + (99,070.250 or 99,070.270) + 99,070.244 close A (close B in a motel enclosure)
Corthina	(*) Except configuration (88 970 1.1 or 88 970 1.2) + (88 970 250 or 88 970 270) + 88 970 241 class A (class B in a metal enclosure) Not included
Earthing Protection rating	In accordance with IEC/EN 60529 :
Protection rating	IP40 on front panel
	IP20 on terminal block
Overvoltage category	3 in accordance with IEC/EN 60664-1
Pollution	Degree : 2 in accordance with IEC/EN 61131-2
Max operating Altitude	Operation : 2000 m
	Transport: 3048 m
Mechanical resistance	Immunity to vibrations IEC/EN 60068-2-6, test Fc
	Immunity to shock IEC/EN 60068-2-27, test Ea
Resistance to electrostatic discharge	Immunity to ESD
D. 1	IEC/EN 61000-4-2, level 3
Resistance to HF interference	Immunity to radiated electrostatic fields IEC/EN 61000-4-3
	Immunity to fast transients (burst immunity)
	IEC/EN 61000-4-4, level 3
	Immunity to shock waves
	IEC/EN 61000-4-5
	Radio frequency in common mode
	IEC/EN 61000-4-6, level 3
	Voltage dips and breaks (AC) IEC/EN 61000-4-11
	Immunity to damped oscillatory waves
	IEC/RN 61000-4-12
Conducted and radiated emissions	Class B (*) in accordance with EN 55022, EN55011 (CISPR22, CISPR 11) group 1
	(*) Except configuration (88 970 1.1 or 88 970 1.2) +
	(88 970 250 or 88 970 270) + 88 970 241 class A (class B in a metal enclosure)
Operating temperature	-20 →+70 °C
	except CB and XB versions in VDC : -30 →+70 °C in accordance with IEC/EN 60068-2-1 and IEC/EN 60068-2-2
Storage temperature	-40 →+70 °C in accordance with IEC/EN 60068-2-1 and
Deletive housidie	IEC/EN 60068-2-2
Relative humidity	95 % max. (no condensation or dripping water) in accordance with IEC/EN 60068-2-30
Mounting	On symmetrical DIN rail, 35 x 7.5 mm and 35 x 15 mm, or on panel (2 x Ø 4 mm)
Screw terminals connection capacity	Flexible wire with ferrule =
эстем тентинать соппесион сарасцу	1 conductor : 0.25 to 2.5 mm ² (AWG 24AWG 14)
	2 conductors 0.25 to 0.75 mm ² (AWG 24AWG 18)
	Semi-rigid wire =
	1 conductor : 0.2 to 2.5 mm ² (AWG 25AWG 14)
	Rigid wire =
	1 conductor : 0.2 to 2.5 mm ² (AWG 25AWG 14)
	2 conductors 0.2 to 1.5 mm ² (AWG 25AWG 14)
	Tightening torque =
	0.5 N.m (4.5 lb-in) (tighten using screwdriver diam. 3.5 mm)
	Also valid for spring cage connectors (ref 88 970 313 and 88 970 317 for the RBT range)

Programming method Laddd Program size Laddd FBD: CB, C XB, X XB, X Program memory Flash Removable memory EEPR Data memory 368 t Back-up time in the event of power failure Program programming Programming Programming Response time Injust Clock drift	CD: 350 typical blocks XD: 700 typical blocks EEPROM ROM bits/200 words Iram and settings in the controller: 10 years Iram and settings in the plug-in memory: 10 years Iram emory: 10 years I	
Program size Laddr FBD: CB, CB, C XB, X XB, X Program memory Removable memory Back-up time in the event of power failure Program back-up time in the event of power failure Program back-up time Cycle time Laddr FBD: Response time Input Clock data retention 10 ye Clock drift Drift 6 s/m Timer block accuracy 1 % a Characteristics of products with AC power supplied	der: 120 lines : CD: 350 typical blocks XD: 700 typical blocks XD: 700 typical blocks ROM Bits/200 words Iram and settings in the controller: 10 years Iram and settings in the plug-in memory: 10 years Iram and settings in the plug-in memory: 10 years Iram end: 10 years If er: typically 20 ms If acquisition time + 1 to 2 cycle times If acquisition time + 1 to 2 cycle times If acquisition time + 1 to 2 cycle times If acquisition time + 1 to 2 cycle times If acquisition time + 1 to 2 cycle times If acquisition time + 1 to 2 cycle times If acquisition time + 1 to 2 cycle times If acquisition time + 1 to 2 cycle times If acquisition time + 1 to 2 cycle times If acquisition time + 25 °C If a min/year (at 25 °C)	
FBD: CB, CC XB, XB, X Program memory Removable memory Data memory Back-up time in the event of power failure Progr Progr Data Cycle time Ladd FBD: Response time Input Clock data retention 10 ye Clock drift Drift 6 s/m Timer block accuracy Start up time on power up Characteristics of products with AC power supplied	: CD : 350 typical blocks XD : 700 typical blocks XD : 700 typical blocks In EEPROM ROM bits/200 words Iram and settings in the controller : 10 years Iram and settings in the plug-in memory : 10 years Iram and settings in the plug-in memory : 10 years Iram emory	
CB, C XB, X XB, X Program memory Removable memory EEPR Data memory Back-up time in the event of power failure Progr Progr Progr Cycle time Ladd FBD Response time Input Clock data retention Clock drift Drift 6 s/m Timer block accuracy Start up time on power up Characteristics of products with AC power supplied	CD: 350 typical blocks XD: 700 typical blocks EEPROM ROM bits/200 words Iram and settings in the controller: 10 years Iram and settings in the plug-in memory: 10 years Iram emory: 10 years I	
XB, XB XB XB XB XB XB XB	XD : 700 typical blocks a EEPROM ROM bits/200 words gram and settings in the controller : 10 years gram and settings in the plug-in memory : 10 years gram and settings in the plug-in memory : 10 years gram emory : 10 years get : typically 20 ms : 6 — 90 ms gram and the strength of the	
XB, XB XB XB XB XB XB XB	XD : 700 typical blocks a EEPROM ROM bits/200 words gram and settings in the controller : 10 years gram and settings in the plug-in memory : 10 years gram and settings in the plug-in memory : 10 years gram emory : 10 years get : typically 20 ms : 6 — 90 ms gram and the strength of the	
Program memory Flash Removable memory EEPR Data memory 368 to Back-up time in the event of power failure Program prograd Cycle time Ladde Response time Input Clock data retention 10 ye Clock drift Drift - 6 s/m Timer block accuracy 1 % s Start up time on power up < 1,2	n EEPROM ROM bits/200 words param and settings in the controller : 10 years param and settings in the plug-in memory : 10 years param end settings in the plug-in memory : 10 years param end settings in the plug-in memory : 10 years param end settings in the plug-in memory : 10 years param end settings in the plug-in memory : 10 years param end settings in the plug-in memory : 10 years param end settings in the plug-in memory : 10 years param end settings in the plug-in memory : 10 years param end settings in the controller : 10 years param end settings in the controller : 10 years param end settings in the controller : 10 years param end settings in the controller : 10 years param end settings in the controller : 10 years param end settings in the controller : 10 years param end settings in the controller : 10 years param end settings in the controller : 10 years param end settings in the controller : 10 years param end settings in the plug-in memory : 10 years param end settings in the plu	
Removable memory EEPR Data memory 368 b Back-up time in the event of power failure Program Program Cycle time Laddw Response time Input Clock data retention 10 ye Clock drift Drift 6 s/m Timer block accuracy 1 % s Start up time on power up < 1,2	BOM bits/200 words yram and settings in the controller : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the controller : 10 years yram and settings in the controller : 10 years yram and settings in the controller : 10 years yram and settings in the controller : 10 years yram and settings in the controller : 10 years yram and settings in the controller : 10 years yram and settings in the controller : 10 years yram and settings in the controller : 10 years yram and settings in the controller : 10 years yram and settings in the controller : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and	
Data memory 368 to Programment Back-up time in the event of power failure Programment Programment Data Cycle time Ladd Response time Input Clock data retention 10 ye Clock drift Drift - 6 s/m Timer block accuracy 1 % s Start up time on power up < 1,2	bits/200 words yram and settings in the controller : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the controller : 10 years yram and settings in the controller : 10 years yram and settings in the controller : 10 years yram and settings in the controller : 10 years yram and settings in the controller : 10 years yram and settings in the controller : 10 years yram and settings in the plug-in memory : 10 years yram and settings in the plug	
Back-up time in the event of power failure Progr Progr Data Cycle time Laddt FBD Response time Input Clock data retention 10 ye Clock drift Drift 6 s/m Timer block accuracy 1 % s Start up time on power up Characteristics of products with AC power supplied	ram and settings in the controller : 10 years ram and settings in the plug-in memory : 10 years It memory : 10 years der : typically 20 ms : 6 →90 ms It acquisition time + 1 to 2 cycle times ears (lithium battery) at 25 °C < 12 min/year (at 25 °C) nonth (at 25 °C with user-definable correction of drift) ± 2 cycle times	
Programme Data Cycle time Ladde FBD Clock data retention 10 ye Clock drift Drift 6 s/m Timer block accuracy 1 % 3 Start up time on power up < 1,2 Characteristics of products with AC power supplied	ram and settings in the plug-in memory: 10 years I memory: 10 years der: typically 20 ms : 6 → 90 ms t acquisition time + 1 to 2 cycle times ears (lithium battery) at 25 °C < 12 min/year (at 25 °C) nonth (at 25 °C with user-definable correction of drift) ± 2 cycle times	
Progr Data	n memory: 10 years der: typically 20 ms : 6 →90 ms t acquisition time + 1 to 2 cycle times ears (lithium battery) at 25 °C < 12 min/year (at 25 °C) nonth (at 25 °C with user-definable correction of drift) ± 2 cycle times	
Cycle time Ladd Response time Input Clock data retention 10 ye Clock drift Drift - 6 s/m Timer block accuracy 1 % - 3 Start up time on power up < 1,2	der : typically 20 ms : 6 →90 ms t acquisition time + 1 to 2 cycle times ears (lithium battery) at 25 °C < 12 min/year (at 25 °C) nonth (at 25 °C with user-definable correction of drift) ± 2 cycle times	
FBD Response time	: 6 →90 ms t acquisition time + 1 to 2 cycle times ears (lithium battery) at 25 °C < 12 min/year (at 25 °C) nonth (at 25 °C with user-definable correction of drift) ± 2 cycle times	
Response time Input Clock data retention 10 ye Clock drift Drift - 6 s/m Timer block accuracy 1 % s Start up time on power up < 1,2	t acquisition time + 1 to 2 cycle times ears (lithium battery) at 25 °C < 12 min/year (at 25 °C) nonth (at 25 °C with user-definable correction of drift) ± 2 cycle times	
Clock data retention 10 ye Clock drift Drift - 6 s/m Timer block accuracy 1 % s Start up time on power up < 1,2	ears (lithium battery) at 25 °C < 12 min/year (at 25 °C) nonth (at 25 °C with user-definable correction of drift) ± 2 cycle times	
Clock drift Drift 6 s/m 6 s/m Timer block accuracy 1 % 4 Start up time on power up Characteristics of products with AC power supplied	< 12 min/year (at 25 °C) nonth (at 25 °C with user-definable correction of drift) ± 2 cycle times	
6 s/m Timer block accuracy 1 % s Start up time on power up < 1,2 Characteristics of products with AC power supplied	nonth (at 25 °C with user-definable correction of drift) ± 2 cycle times	
Timer block accuracy 1 % s Start up time on power up < 1,2 Characteristics of products with AC power supplied	± 2 cycle times	
Start up time on power up < 1,2 Characteristics of products with AC power supplied	•	
Start up time on power up < 1,2 Characteristics of products with AC power supplied	•	
Characteristics of products with AC power supplied	- 3	
Supply		
Nominal voltage 24 V	AC	100 →240 V AC
•	% / +20 %).4 V AC→28.8 V AC	-15 % / +10 % or 85 V AC→264 V AC
	0 Hz (+4 % / -6 %)	50/60 Hz (+ 4 % / - 6 %) or 47 →53 Hz/57 →63 Hz
	7 →53 Hz/57 →63 Hz	00/00 112 (+ 4 /0 / - 0 /0) 01 41 →03 112/01 →03 11Z
Immunity from micro power cuts 10 ms	s (repetition 20 times)	10 ms (repetition 20 times)
	2-CD12-XD10-XB10 : 4 VA	CB12-CD12-XD10-XB10 : 7 VA
· · · · · · · · · · · · · · · · · · ·	0-CD20 : 6 VA	CB20-CD20 : 11 VA
	0-XB10 with extension - XD26-XB26 : 7.5 VA 6-XB26 with extension : 10 VA	XD10-XB10 with extension - XD26-XB26 : 12 VA XD26-XB26 with extension : 17 VA
Isolation voltage 1780) V AC	1780 V AC
nputs		
Input voltage 24 V	AC (-15 % / +20 %)	100 →240 V AC (-15 % / +10 %)
	nA @ 20.4 V AC	
·	nA @ 24.0 V AC	0.24 mA @ 85 V AC
	nA @ 28.8 V AC	0.75 mA @ 264 V AC
		25210
Input impedance 4.6 kg		350 kΩ
Logic 1 voltage threshold ≥ 14 V	V AC	≥ 79 V AC
Making current at logic state 1 > 2 m	nA	> 0.17 mA
Logic 0 voltage threshold ≤ 5 V	/ AC	≤ 20 V AC (≤ 28 V AC : XE10, XR06, XR10, XR14)
Release current at logic state 0 <0.5		< 0.5 mA
ÿ		
Response time with LADDER programming 50 ms		50 ms
	e 0 →1 (50/60 Hz)	State 0 →1 (50/60 Hz)
	igurable in increments of 10 ms	Configurable in increments of 10 ms
50 ms	s min. up to 255 ms	50 ms min. up to 255 ms
State	e 0 →1 (50/60 Hz)	State 0 →1 (50/60 Hz)
Maximum counting frequency In acc	cordance with cycle time (Tc) and input response time (Tr):	In accordance with cycle time (Tc) and input response time (Tr):
1/((2	2 x Tc) + Tr)	1/ ((2 x Tc) + Tr)
Sensor type Conta	act or 3-wire PNP	Contact or 3-wire PNP
Input type Resis		Resistive
Isolation between power supply and inputs None		None
Isolation between inputs None		None
Protection against polarity inversions Yes		Yes
	CD screen for CD and XD	On LCD screen for CD and XD
Characteristics of relay outputs common to the entire ra		
	30 V DC	
	→250 V AC	
	CD-XD10-XB10-XR06-XR10 : 8 A	
	6-XB26: 8 x 8 A relays, 2 x 5 A relays	
	0 : 4 x 5 A relays	
	4 : 4 x 8 A relays, 2 x 5 A relays	
	(Removable Terminal Blocks) versions : verify the maximum c	urrent according to the type of connection used
Electrical durability for 500 000 operating cycles Utiliza	ation category DC-12 : 24 V, 1.5 A	
Utiliza	ation category DC-13 : 24 V (L/R = 10 ms), 0.6 A	
Utiliza	ration category AC-12 : 230 V, 1.5 A	
Utiliza	ration category AC-15: 230 V, 0.9 A	
	for O8, O9, OA	
	nA (at minimum voltage of 12 V)	
2 1 2	,	
	, 10 mA	
	pad: 10 Hz	
	perating current : 0.1 Hz	
Mechanical life 10,00	00,000 (operations)	
Voltage for withstanding shocks In acc	cordance with IEC/EN 60947-1 and IEC/EN 60664-1 : 4 kV	
	e 10 ms	
	ase 5 ms	
	nst short-circuits : None	
	nst overvoltages and overloads : None	
-	.CD screen for CD and XD	
Characteristics of product with DC power supplied	SEE	

Supply
Community Comm
Or 10.4 V DC, -14.4 V DC (notuding repole)
Street S
Strong (repetition 20 times) Strong (repetition 20 times) Strong (repetition 20 times) Strong (repetition 20 times) CR12 vist soil state outputs : 1.5 W CD12 : 1.5
CR12 with solid state outputs : 1.5 W CR12 c.5 TW CR
CD12: 1.5 W XD16-XS10 with relay outputs: 4 W XD26-XB26 with solid state outputs: 5 W XD26-XB26 with solid state outputs: 5 W XD26-XB26 with solid state outputs: 5 W XD26-XB26 with relateration: 5 W XD26-XB26 with external on: 1 0 W
CD20 : 2.5 W XD26-XB26 with sold sate outputs : 5 W XD26-XB26 with relay outputs : 6 W XD26-XB26 with extension : 5 W XD26-XB26 with extension : 5 W XD26-XB20 with relay outputs : 7 W XD26-XB20 with relay outputs : 8
NDB-RBB-13 W NDB-BBB-14 with extension : 5 W NDB-BBB-26 with extension : 5 W NDB-BBB-26 with extension : 5 W NDB-BBB-26 with extension : 10 W NDB-BB-26 wit
NDB6 - NBB6 with extension : 5 N NDB6 with solid state outputs : 2.5 W NDB6 with solid state outputs : 2.5 W NDB6 with solid state outputs : 2.5 W Yes
Protection against polarity investions Yes
Protection against polarity inversions Yes
Digital inputs (It to IA and IH to IY)
Digital inputs (It to IA and IH to IY)
Input vallage
Input current
4.4 m
4.4 m
5.3 m Å ® 14.4 VDC
Logic 1 voltage threshold 2,7 k
Logic TiveTage threshold
Making-current all opic state ≥ 2 mA ≥ 2.2 mA
Logic Ovoltage threshold
Response time
Response time
Response time
Maximum counting frequency Inputs 1 & 12 : Ladder (1 kHz) & FBD (up to 6 k Hz) Inputs 1 & 12 : Ladder (1 kHz) & FBD (up to 6 k Hz) Inputs 1 & 12 : Ladder (1 kHz) & FBD (up to 6 k Hz) Inputs 1 & 12 : Ladder (1 kHz) & FBD (up to 6 k Hz) Inputs 1 & 12 : Ladder (1 kHz) & FBD (up to 6 k Hz) Inputs 1 & 12 : Ladder (1 kHz) & FBD (up to 6 k Hz) Inputs 1 & 12 : Ladder (1 kHz) & FBD (up to 6 k Hz) Inputs 1 & 12 : Ladder (1 kHz) & FBD (up to 6 k Hz) Inputs 1 & 12 : Ladder (1 kHz) & FBD (up to 6 k Hz) Inputs 1 & 12 : Ladder (1 kHz) & FBD (up to 6 k Hz) Inputs 1 & 12 : Ladder (1 kHz) & FBD (up to 6 k Hz) Inputs 1 & 12 : Ladder (1 kHz) & FBD (up to 6 k Hz) Inputs 1 & 12 : Ladder (1 kHz) & FBD (up to 6 k Hz) Inputs 1 & 12 : Ladder (1 kHz) & FBD (up to 6 k Hz) Inputs 1 & 12 : Ladder (1 kHz) & FBD (up to 6 k Hz) Inputs 1 & 12 : Ladder (1 kHz) & FBD (up to 6 k Hz) Inputs 1 & 12 : Ladder (1 kHz) & FBD (up to 6 k Hz) Inputs 1 & 12 : Ladder (1 kHz) & FBD (up to 6 k Hz) Inputs 1 & 12 : Ladder (1 kHz) & FBD (up to 6 k Hz) Inputs 10 & 10 : Ladder (1 kHz) & FBD (up to 6 k Hz) Inputs 10 & 10 : Ladder (1 kHz) & FBD (up to 6 k Hz) Input Input 10 : Ladder (1 kHz) & FBD (up to 6 k Hz) Input Input 10 : Ladder (1 kHz) & FBD (up to 6 k Hz) Input Input 10 : Ladder (1 kHz) & FBD (up to 6 k Hz) Input Input 10 : Ladder (1 kHz) & FBD (up to 6 kHz) Input Input 10 : Ladder (1 kHz) & FBD (up to 6 kHz) Input Input 10 : Ladder (1 kHz) & FBD (up to 6 kHz) Input Input Input 10 : Ladder (1 kHz) & FBD (up to 6 kHz) Input In
Inputs 13 to IA & IH to IY : In accordance with cycle time (Tc) and inputs as to IA & IH to IY : In accordance with cycle time (Tc) and input response (Tc) and input response time (Tc) a
Inputs 13 to 1A & IH to IY : In accordance with cycle time (Tc) and inputs as to 1A & IH to IY : In accordance with cycle time (Tc) and input response time (
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) 6812-CD12-XD10-XB10 4 inputs IB → IE 6 inputs IB → IE CB20-CD20-XB26-XD26 6 inputs IB → IG 6 inputs IB → IG Input IB → IG Input sused as analogue inputs 0 → 10 V) or (0 → V power supply) 0 → 10 V) or (0 → V power supply) Input sused as analogue inputs 0 → 10 V) or (0 → V power supply) 0 → 10 V) or (0 → V power supply) Input sused as analogue inputs 0 → 10 V) or (0 → V power supply) 0 → 10 V) or (0 → V power supply) Input sused as analogue inputs 0 → 10 V) or (0 → V power supply) 0 → 10 V) or (0 → V power supply) Input sused as analogue inputs 14 kΩ 12 kΩ 12 kΩ Input sused as analogue inputs
Type 1
Input type
Solation between power supply and inputs None Yes Yes Yes Yes Yes Yes Status indicator On LCD screen for CD and XD On LCD sc
Solation between power supply and inputs None Yes Yes Yes Yes Yes Yes Status indicator On LCD screen for CD and XD On LCD sc
Solation between inputs None Yes Yes Yes
Protection against polarity inversions Yes Yes Status indicator On LCD screen for CD and XD Analogue or digital inputs (IB to IG) 6 inputs IB →IE 4 inputs IB →IE CB12-CD12-XD10-XB10 4 inputs IB →IE 6 inputs IB →IG CB20-CD20-XB26-XD26 6 inputs IB →IG 6 inputs IB →IG Inputs used as analogue inputs (0 →10 V) or (0 →V power supply) (0 →10 V) or (0 →V power supply) Input impedance 14 kΩ 12 kΩ Input voltage 14.4 V DC max. 30 V DC max. Value of LSB 14 mV, 4 mA 29 mV, 4 mA Input type Common mode Common mode Resolution 10 bits at max. input voltage 10 bits at max. input voltage Conversion time Controller cycle time Controller cycle time Accuracy at 25 °C ± 5 % ± 6.2 % Accuracy at 55 °C ± 2 % ± 6.2 % 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 Poten
Status indicator Analogue or digital inputs (IB to IG) $CB12\text{-}CD12\text{-}XD10\text{-}XB10$ 4 inputs $IB \rightarrow IE$ 6 inputs $IB \rightarrow IE$ 6 inputs $IB \rightarrow IE$ 6 inputs $IB \rightarrow IG$ Inputs used as analogue inputs Measurement range (0 \rightarrow 10 V) or (0 \rightarrow V power supply) Input impedance 14 k Ω 12 k Ω Input voltage 14 $\downarrow AV \rightarrow DC \rightarrow D$
Analogue or digital inputs (IB to IG) CB12-CD12-XD10-XB10
CB12-CD12-XD10-XB10 4 inputs IB →IE 4 inputs IB →IE CB20-CD20-XB26-XD26 6 inputs IB →IG 6 inputs IB →IG Inputs used as analogue inputs Measurement range $(0 → 10 \lor)$ or $(0 → V)$ power supply) $(0 → 10 \lor)$ or $(0 → V)$ power supply) Input winpedance $14 \text{ k}\Omega$ $12 \text{ k}\Omega$ Input voltage $14 \text{ k} \lor V$ DC max. $30 \lor D$ C max. Value of LSB 14 mV , 4 mA 29 mV , 4 mA Input type Common mode Common mode Resolution $10 \text{ bits at max. input voltage}$ Conversion 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 Cable length None Protection against polarity inversions Yes Potentiometer control $2.2 \text{ k}\Omega/0.5 \text{ W}$ (recommended) $10 \text{ k}\Omega$ max.
CB12-CD12-XD10-XB10 4 inputs IB →IE 6 inputs IB →IE 6 inputs IB →IE 6 inputs IB →IG 6 inputs IB →IG 6 inputs IB →IG 6 inputs used as analogue inputs Measurement range (0 →10 V) or (0 →V power supply) (0 →10 V) or (0 →V power supply) (12 kΩ 12 kΩ 12 kΩ 12 kΩ 12 kΩ 12 kΩ 13 kΩ 14 kΩ 12 kΩ 15 kΩ 14 kΩ 15
CB20-CD20-XB26-XD26 6 inputs IB →IG 6 inputs IB →IG Inputs used as analogue inputs (0 →10 V) or (0 →V power supply) (0 →10 V) or (0 →V power supply) Input impedance 14 kΩ 12 kΩ Input voltage 14.4 V DC max. 30 V DC max. Value of LSB 14 mV, 4 mA 29 mV, 4 mA Input type Common mode Common mode Resolution 10 bits at max. input voltage 10 bits at max. input voltage Conversion time Controller cycle time Controller cycle time Accuracy at 25 °C ± 5 % ± 5 % Accuracy at 55 °C ± 6.2 % ± 6.2 % Repeat accuracy at 55 °C ± 2 % ± 2 % Isolation between analogue channel and power supply None None Cable length None None Cable length 10 m maximum, with shielded cable (sensor not isolated) 10 m maximum, with shielded cable (sensor not isolated) Potentiometer control 2.2 kΩ/0.5 W (recommended) 2.2 kΩ/0.5 W (recommended) 10 kΩ max. 10 kΩ max.
Inputs used as analogue inputs (0 →10 V) or (0 →V power supply) (0 →10 V) or (0 →V power supply) Input impedance 14 kΩ 12 kΩ Input voltage 14.4 V DC max. 30 V DC max. Value of LSB 14 mV, 4 mA 29 mV, 4 mA Input type Common mode Common mode Resolution 10 bits at max. input voltage 10 bits at max. input voltage Conversion time Controller cycle time Controller cycle time Accuracy at 25 °C ± 5 % ± 5 % Accuracy at 55 °C ± 6.2 % ± 6.2 % Repeat accuracy at 55 °C ± 2 % ± 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 Potentiometer control 2.2 kΩ/0.5 W (recommended) 2.2 kΩ/0.5 W (recommended) 10 kΩ max. 10 kΩ max. 10 kΩ max.
Measurement range $(0 \rightarrow 10 \text{ V})$ or $(0 \rightarrow \text{V power supply})$ $(0 \rightarrow 10 \text{ V})$ or $(0 \rightarrow \text{V power supply})$ Input impedance $14 \text{ k}\Omega$ $12 \text{ k}\Omega$ Input voltage 14.4 V DC max . 30 V DC max .Value of LSB 14 mV , 4 mA 29 mV , 4 mA Input typeCommon modeCommon modeResolution $10 \text{ bits at max. input voltage}}$ $10 \text{ bits at max. input voltage}$ Conversion timeController cycle timeController cycle timeAccuracy 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 supplyNoneNoneCable length $10 \text{ m maximum, with shielded cable (sensor not isolated)}$ $10 \text{ m maximum, with shielded cable (sensor not isolated)}$ Protection against polarity inversionsYesYesPotentiometer control $2.2 \text{ k}\Omega/0.5 \text{ W (recommended)}$ $2.2 \text{ k}\Omega/0.5 \text{ W (recommended)}$ $10 \text{ k}\Omega \text{ max.}$ $10 \text{ k}\Omega \text{ max.}$
Measurement range $(0 \rightarrow 10 \text{ V})$ or $(0 \rightarrow \text{V power supply})$ $(0 \rightarrow 10 \text{ V})$ or $(0 \rightarrow \text{V power supply})$ Input impedance $14 \text{ k}\Omega$ $12 \text{ k}\Omega$ Input voltage 14.4 V DC max . 30 V DC max .Value of LSB 14 mV , 4 mA 29 mV , 4 mA Input typeCommon modeCommon modeResolution $10 \text{ bits at max. input voltage}}$ $10 \text{ bits at max. input voltage}$ Conversion timeController cycle timeController cycle timeAccuracy 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 supplyNoneNoneCable length $10 \text{ m maximum, with shielded cable (sensor not isolated)}$ $10 \text{ m maximum, with shielded cable (sensor not isolated)}$ Protection against polarity inversionsYesYesPotentiometer control $2.2 \text{ k}\Omega/0.5 \text{ W (recommended)}$ $2.2 \text{ k}\Omega/0.5 \text{ W (recommended)}$ $10 \text{ k}\Omega \text{ max.}$ $10 \text{ k}\Omega \text{ max.}$
Input impedance14 kΩ12 kΩInput voltage14.4 V DC max.30 V DC max.Value of LSB14 mV, 4 mA29 mV, 4 mAInput typeCommon modeCommon modeResolution10 bits at max. input voltage10 bits at max. input voltageConversion timeController cycle timeController cycle timeAccuracy at 25 °C ± 5 % ± 5 %Accuracy at 55 °C ± 6.2 % ± 6.2 %Repeat accuracy at 55 °C ± 2 % ± 2 %Isolation between analogue channel and power supplyNoneNoneCable length10 m maximum, with shielded cable (sensor not isolated)10 m maximum, with shielded cable (sensor not isolated)Protection against polarity inversionsYesYesPotentiometer control2.2 kΩ/0.5 W (recommended) 10 kΩ max.2.2 kΩ/0.5 W (recommended) 10 kΩ max.
Input voltage $14.4 \text{ V DC max}.$ $30 \text{ V DC max}.$ Value of LSB 14 mV , 4 mA 29 mV , 4 mA Input typeCommon modeCommon modeResolution $10 \text{ bits at max. input voltage}$ $10 \text{ bits at max. input voltage}$ Conversion timeController cycle timeController cycle timeAccuracy at $25 ^{\circ}$ C $\pm 5 \%$ $\pm 5 \%$ Accuracy at $55 ^{\circ}$ C $\pm 6.2 \%$ $\pm 6.2 \%$ Repeat accuracy at $55 ^{\circ}$ C $\pm 2 \%$ $\pm 2 \%$ Isolation between analogue channel and power supplyNoneNoneCable length 10 m maximum, with shielded cable (sensor not isolated) 10 m maximum, with shielded cable (sensor not isolated)Protection against polarity inversionsYesYesPotentiometer control $2.2 \text{ k}\Omega/0.5 \text{ W}$ (recommended) $10 \text{ k}\Omega \text{ max}.$ $2.2 \text{ k}\Omega/0.5 \text{ W}$ (recommended) $10 \text{ k}\Omega \text{ max}.$
Value of LSB14 mV, 4 mA29 mV, 4 mAInput typeCommon modeCommon modeResolution10 bits at max. input voltage10 bits at max. input voltageConversion timeController cycle timeController cycle timeAccuracy 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 supplyNoneNoneCable length10 m maximum, with shielded cable (sensor not isolated)10 m maximum, with shielded cable (sensor not isolated)Protection against polarity inversionsYesYesPotentiometer control $2.2 \ k\Omega/0.5 \ W$ (recommended) 10 k Ω max. $2.2 \ k\Omega/0.5 \ W$ (recommended) 10 k Ω max.
Value of LSB14 mV, 4 mA29 mV, 4 mAInput typeCommon modeCommon modeResolution10 bits at max. input voltage10 bits at max. input voltageConversion timeController cycle timeController cycle timeAccuracy 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 supplyNoneNoneCable length10 m maximum, with shielded cable (sensor not isolated)10 m maximum, with shielded cable (sensor not isolated)Protection against polarity inversionsYesYesPotentiometer control $2.2 \ k\Omega/0.5 \ W$ (recommended) 10 k Ω max. $2.2 \ k\Omega/0.5 \ W$ (recommended) 10 k Ω max.
Input type Common mode Common mode Resolution 10 bits at max. input voltage 10 bits at max. input voltage Conversion time Controller cycle time Controller cycle time Accuracy at 25 °C ± 5 % ± 5 % Accuracy at 55 °C ± 6.2 % ± 6.2 % Repeat accuracy at 55 °C ± 2 % ± 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 Potentiometer control 2.2 kΩ/0.5 W (recommended) 2.2 kΩ/0.5 W (recommended) 10 kΩ max. 10 kΩ max.
Resolution10 bits at max. input voltage10 bits at max. input voltageConversion timeController cycle timeController cycle timeAccuracy 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 supplyNoneNoneCable length10 m maximum, with shielded cable (sensor not isolated)10 m maximum, with shielded cable (sensor not isolated)Protection against polarity inversionsYesYesPotentiometer control $2.2 \text{ k}\Omega/0.5 \text{ W}$ (recommended) 10 k Ω max. $2.2 \text{ k}\Omega/0.5 \text{ W}$ (recommended) 10 k Ω max.
Controller cycle time Accuracy at 25 °C $\pm 5\%$ Accuracy at 55 °C $\pm 6.2\%$ Expeat accuracy at 55 °C $\pm 2\%$ Isolation between analogue channel and power supply Cable length 10 m maximum, with shielded cable (sensor not isolated) Protection against polarity inversions Yes Potentiometer control Controller cycle time $\pm 5\%$ $\pm 6.2\%$ $\pm 6.2\%$ $\pm 2\%$ None None None None 10 m maximum, with shielded cable (sensor not isolated) Yes Yes Potentiometer control 2.2 k Ω /0.5 W (recommended) 10 k Ω max.
Accuracy at 25 °C ± 5 % ± 6.2 % ± 6.2 % ± 6.2 % ± 2 % Repeat accuracy at 55 °C ± 2 % ± 2 % None None None Cable length 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) 10 m maximum, with shielded cable (sensor not isolated) 10 k Ω max.
Accuracy at 25 °C ± 5 % ± 6.2 % ± 6.2 % ± 6.2 % ± 6.2 % ± 2 % ± 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) 7 yes 7 yes 7 yes 7 yes 9 Yes 9 Yes 10 kΩ/0.5 W (recommended) 10 kΩ max. 10 kΩ max.
Accuracy at 55 °C \pm 6.2 % \pm 2 % None None Cable length 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) 10 m maximum, with shielded cable (sensor not isolated) 10 m maximum, with shielded cable (sensor not isolated) 10 kg max.
Repeat accuracy at 55 °C $\pm 2\%$ $\pm 2\%$ None None None Cable length 10 m maximum, with shielded cable (sensor not isolated) 10 m maximum, with
Isolation between analogue channel and power supplyNoneNoneCable length10 m maximum, with shielded cable (sensor not isolated)10 m maximum, with shielded cable (sensor not isolated)Protection against polarity inversionsYesYesPotentiometer control2.2 kΩ/0.5 W (recommended)2.2 kΩ/0.5 W (recommended)10 kΩ max.10 kΩ max.
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 Potentiometer control 2.2 kΩ/0.5 W (recommended) 2.2 kΩ/0.5 W (recommended) 10 kΩ max. 10 kΩ max.
Protection against polarity inversionsYesYesPotentiometer control $2.2 \text{ k}\Omega/0.5 \text{ W}$ (recommended) 10 kΩ max. $2.2 \text{ k}\Omega/0.5 \text{ W}$ (recommended) 10 kΩ max.
Protection against polarity inversionsYesYesPotentiometer control $2.2 \text{ k}\Omega/0.5 \text{ W}$ (recommended) 10 kΩ max. $2.2 \text{ k}\Omega/0.5 \text{ W}$ (recommended) 10 kΩ max.
Potentiometer control 2.2 k Ω /0.5 W (recommended) 2.2 k Ω /0.5 W (recommended) 10 k Ω max. 10 k Ω max.
10 kΩ max. 10 kΩ max.
Innute used as digital innute
muuta uacu ga ululigi muuta
Input current 0.7 mA @ 10.44 VDC 1.6 mA @ 19.2 VDC
0.9 mA @ 12.0 VDC 2.0 mA @ 24.0 V DC
1.0 mA @ 14.4VDC 2.5 mA @ 30.0 VDC
Input impedance 14 k Ω 12 k Ω
Logic 1 voltage threshold ≥ 7 V DC ≥ 15 VDC
Making current at logic state 1 ≥ 0.5 mA ≥ 1.2 mA
Logic 0 voltage threshold ≤ 3 V DC ≤ 5 V DC
Release current at logic state 0 ≤ 0.5 mA ≤ 0.5 mA
Response time $1 \rightarrow 2$ cycle times $1 \rightarrow 2$ cycle times
1/ ((2 x Tc) + 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 None
Protection against polarity inversions Yes Yes
Status indicator On LCD screen for CD and XD On LCD screen for CD and XD
Characteristics of relay outputs common to the entire range
Max. breaking voltage $5 \rightarrow 30 \text{ V DC}$
24 →250 V AC
Max. Output Common Current 12A (10A UL) for O8, O9, OA
Breaking current CB-CD-XD10-XR10-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

3/11/2012		www.crouzet.c
Electrical durability for 500 000 operating cycles	Utilization category DC-12: 24 V, 1.5 A Utilization category DC-13: 24 V (L/R = 10 ms), 0.6 A Utilization category AC-12: 230 V, 1.5 A Utilization 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)	
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		
PWM solid state output*	CB12: O4	CD12-XD10-XB10 : O4
TVIVI Solid State Sulput	XD26 : O4 →O7	CD20-XD26-XB26 : O4 →O7
* Only available with "FBD" programming language	* Only available with "FBD" programming language	
Breaking voltage	10.4 →30 V DC	19.2 →30 V DC
Nominal voltage	12-24 VDC	24 V DC
Nominal current	0.5 A	0.5 A
Max. breaking current	0,625 A	0.625 A
Voltage drop	≤ 2 V for I = 0.5 A (at state 1)	≤ 2 V for I = 0.5 A (at state 1)
Response time	Make ≤ 1 ms	Make ≤ 1 ms
	Release ≤ 1 ms	Release ≤ 1 ms
Built-in protections	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 logic controller output and the load	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 logic controller output and the load
Min. load	1 mA	1 mA
Maximum incandescent load	0,2 A / 12 V DC 0,1 A / 24 V DC	0,1 A / 24 V DC
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 →100 % (256 steps for CD, XD and 1024 steps for XA)	$0 \rightarrow 100 \%$ (256 steps for CD, XD and 1024 steps for XA)
PWM accuracy at 120 Hz	< 5 % (20 % →80 %) load at 10 mA	< 5 % (20 % →80 %) load at 10 mA
PWM accuracy at 500 Hz	< 10 % (20 % →80 %) load at 10 mA	< 10 % (20 % →80 %) load at 10 mA
Status indicator	On LCD screen for XD	On LCD screen for CD and XD