

Smart "Compact" range without display CB12 Smart Part number 88974024



- Efficient and economical version, without display or keys setting
 Allow the use of the entire library of specific functions blocs of the software workshop
- Extended temperature range (-30 °C →+70 °C)
 Analogue inputs 0-10 VDC, Potentiometer, NTC, LDR (0-20 mA/Pt100 with converters)

num	

Type	Inputs	Outputs	Supply
88974024 CB12 Smart	8 digital	4 relays 8 A	24 V AC

General environment characteristics for	r CB. CD. X	D. XB. XR and XE	product types
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Ocheral chivironinient characteristics for OD, OD, 7	
Certifications	CE, UL, CSA, GL
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 (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)
Earthing	Not included
Protection rating	In accordance with IEC/EN 60529:
	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
Max operating Attitude	Transport: 3048 m
Mechanical resistance	Immunity to vibrations IEC/EN 60068-2-6, test Fc
iviechanica resistance	Immunity to shock IEC/EN 60068-2-27, test Ea
Resistance to electrostatic discharge	Immunity to ESD
resistance to electrostatic discridinge	IEC/EN 61000-4-2, level 3
Resistance to HF interference	Immunity to radiated electrostatic fields
Resistance to HE interierence	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/EN 61000-4-12
Conducted and radiated emissions	Class B (*) in accordance with EN 55022, EN 55011 (CISPR22, CISPR11) 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
operating temperature	except CB and XB versions in VDC : -30 →+70 °C (+40 °C in a non-ventilated enclosure)
	in accordance with IEC/EN 60068-2-1 and IEC/EN 60068-22
Storage temperature	-40 →+80 °C in accordance with IEC/EN 60068-2-1 and
Joint ago tomporature	IEC/EN 60068-2-2
Relative humidity	95 % max. (no condensation or dripping water) in accordance with
Totalivo Harmany	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 =
Screw terminals confidention capacity	
	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 16)
	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)

General characteristics

			www.crouzet.com
Operating temperature	-30 →+70 °C (DC) ; -20 →+70 °C (AC)		
Operating factor	100 % (6 A relays)		
	66 % (8 A relays)		
Storage temperature	-40 →+80 °C		
Processing characteristics of CB, CD, XD & XB pro	oduct types		
LCD display	CD, XD : Display with 4 lines of 18 characters		
Programming method	Function blocks / SCF (Grafcet) or Ladder		
Program size	8 Kb: 350 typical blocks, 64 macros maximum, 256 block	ks maximun	n ner macro
1 10914111 3120	or to 1.350 typical blocks, 64 macros maximum, 256 blocks maximum per macro		
	120 lines in Ladder		
Program memory	Flash EEPROM		
Removable memory	EEPROM		
Data memory	368 bit/200 words		
Back-up time in the event of power failure	Program and settings in the controller : 10 years		
back-up time in the event of power failure	Program and settings in the controller: To years Program and settings in the plug-in memory: 10 years		
	Data memory: 10 years		
Cycle time	FBD : 6 →90 ms (typically 20 ms)		
oyole time	Ladder: typically 20 ms		
Response time	Input acquisition time : 1 to 2 cycle times		
•			
Clock data retention	10 years (lithium battery) at 25 °C		
Clock drift	Drift < 12 min/year (at 25 °C)	: [1]	
The sale lands are seen	6 s/month (at 25 °C with user-definable correction of dri	IIT)	
Timer block accuracy	1 % ± 2 cycle times		
Start up time on power up	< 1,2 s		
Characteristics of products with AC power supplied	ed		
Supply	24.1/.40	100 0:1	21/40
Nominal voltage	24 V AC	100 →240	
Operating limits	-15 % / +20 %	-15 % / +1	
	or 20.4 V AC→28.8 V AC	or 85 V A	C→264 V AC
Supply frequency range	50/60 Hz (+4 % / -6 %)	50/60 Hz	(+ 4 % / - 6 %) or 47 →53 Hz/57 →63 Hz
	or 47 →53 Hz/57 →63 Hz		,
Immunity from micro power cuts	10 ms (repetition 20 times)		petition 20 times)
Max. absorbed power	CB12-CD12-XD10-XB10 : 4 VA		12-XD10-XB10 : 7 VA
	CB20-CD20:6 VA		20 : 11 VA
	XD10-XB10 with extension : 7.5 VA		10 with extension : 12 VA
	XD26-XB26 : 7.5 VA	XD26-XB2	
Indiana college	XD26-XB26 with extension : 10 VA		26 with extension : 17 VA
Isolation voltage	1780 V AC	1780 V A	•
Inputs			
Input voltage	24 V AC (-15 % / +20 %)		100 →240 V AC (-15 % / +10 %)
Input current	4.4 mA @ 20.4 V AC		
	5.2 mA @ 24.0 V AC		0.24 mA @ 85 V AC
	6.3 mA @ 28.8 V AC		0.75 mA @ 264 V AC
Input impedance	4.6 kΩ		350 kΩ
Logic 1 voltage threshold	≥ 14 V AC		≥ 79 V AC
Making current at logic state 1	> 2 mA		> 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 mA		< 0.5 mA
· ·			
Response time with LADDER programming	50 ms State 0 →1 (50/60 Hz)		50 ms State 0 →1 (50/60 Hz)
Decrease the with the discharge blocks are secured as			
Response time with function blocks programming	Configurable in increments of 10 ms		
			Configurable in increments of 10 ms
	50 ms min. up to 255 ms State 0 →1 (50/60 Hz)		50 ms min. up to 255 ms
Maximum counting frequency	State 0 →1 (50/60 Hz)	me (Tr\ ·	50 ms min. up to 255 ms State 0 \rightarrow 1 (50/60 Hz)
Maximum counting frequency	State 0 \rightarrow 1 (50/60 Hz) In accordance with cycle time (Tc) and input response ti	me (Tr):	50 ms min. up to 255 ms State 0 \rightarrow 1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr) :
3 1 2	State 0 \rightarrow 1 (50/60 Hz) In accordance with cycle time (Tc) and input response ti 1/ ((2 x Tc) + Tr)	me (Tr) :	50 ms min. up to 255 ms State 0 \rightarrow 1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr) : 1/ ((2 x Tc) + Tr)
Sensor type	State 0 \rightarrow 1 (50/60 Hz) In accordance with cycle time (Tc) and input response ti 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP	me (Tr) :	50 ms min. up to 255 ms State 0 \rightarrow 1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr) : 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP
Sensor type Input type	State 0 \rightarrow 1 (50/60 Hz) In accordance with cycle time (Tc) and input response ti 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive	me (Tr) :	50 ms min. up to 255 ms State 0 \rightarrow 1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr) : 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive
Sensor type Input type Isolation between power supply and inputs	State 0 \rightarrow 1 (50/60 Hz) In accordance with cycle time (Tc) and input response ti 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None	me (Tr) :	50 ms min. up to 255 ms State 0 \rightarrow 1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr) : 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None
Sensor type Input type Isolation between power supply and inputs Isolation between inputs	State 0 \rightarrow 1 (50/60 Hz) In accordance with cycle time (Tc) and input response ti 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None	me (Tr) :	50 ms min. up to 255 ms State 0 \rightarrow 1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr) : 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None
Sensor type Input type Isolation between power supply and inputs Isolation between inputs Protection against polarity inversions	State 0 \rightarrow 1 (50/60 Hz) In accordance with cycle time (Tc) and input response ti 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes	me (Tr) :	50 ms min. up to 255 ms State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr): 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes
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Sensor type Input type Isolation between power supply and inputs Isolation between inputs Protection against polarity inversions Status indicator Characteristics of relay outputs common to the en	State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response ti 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes On LCD screen for CD and XD httre range	me (Tr) :	50 ms min. up to 255 ms State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr): 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes
Sensor type Input type Isolation between power supply and inputs Isolation between inputs Protection against polarity inversions Status indicator	State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response ti 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes On LCD screen for CD and XD	me (Tr) :	50 ms min. up to 255 ms State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr): 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes
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Sensor type Input type Isolation between power supply and inputs Isolation between inputs Protection against polarity inversions Status indicator Characteristics of relay outputs common to the en	State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response ti 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes On LCD screen for CD and XD Intererange 5 →30 V DC 24 →250 V AC CB-CD-XD10-XB10-XR06-XR10: 8 A	me (Tr) :	50 ms min. up to 255 ms State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr): 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes
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Sensor type Input type Isolation between power supply and inputs Isolation between inputs Protection against polarity inversions Status indicator Characteristics of relay outputs common to the en	State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response ti 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes On LCD screen for CD and XD Intererange 5 →30 V DC 24 →250 V AC CB-CD-XD10-XB10-XR06-XR10: 8 A	me (Tr) :	50 ms min. up to 255 ms State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr): 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes
Sensor type Input type Isolation between power supply and inputs Isolation between inputs Protection against polarity inversions Status indicator Characteristics of relay outputs common to the en	State $0 \rightarrow 1$ (50/60 Hz) In accordance with cycle time (Tc) and input response ti 1/ ($(2 \times Tc) + Tr$) Contact or 3-wire PNP Resistive None None Yes On LCD screen for CD and XD **tire range** $5 \rightarrow 30 \text{ V DC}$ $24 \rightarrow 250 \text{ V AC}$ 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		50 ms min. up to 255 ms State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr): 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes On LCD screen for CD and XD
Sensor type Input type Isolation between power supply and inputs Isolation between inputs Protection against polarity inversions Status indicator Characteristics of relay outputs common to the en	State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response ti 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None None Yes On LCD screen for CD and XD **tire range** 5 →30 V DC 24 →250 V AC CB-CD-XD10-XB10-XR06-XR10:8 A XD26-XB26:8 x 8 A relays, 2 x 5 A relays XR14:4 x 8 A relays, 2 x 5 A relays		50 ms min. up to 255 ms State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr): 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes On LCD screen for CD and XD
Sensor type Input type Isolation between power supply and inputs Isolation between inputs Protection against polarity inversions Status indicator Characteristics of relay outputs common to the er Max. breaking voltage Breaking current	State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response ti 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes On LCD screen for CD and XD Interesting 5 →30 V DC 24 →250 V AC 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 RBT (Removable Terminal Blocks) versions: verify the relation of the contact of the contac		50 ms min. up to 255 ms State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr): 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes On LCD screen for CD and XD
Sensor type Input type Isolation between power supply and inputs Isolation between inputs Protection against polarity inversions Status indicator Characteristics of relay outputs common to the er Max. breaking voltage Breaking current	State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response ti 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes On LCD screen for CD and XD Intererange 5 →30 V DC 24 →250 V AC 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 RBT (Removable Terminal Blocks) versions: verify the relationship of the statement of the stateme		50 ms min. up to 255 ms State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr): 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes On LCD screen for CD and XD
Sensor type Input type Isolation between power supply and inputs Isolation between inputs Protection against polarity inversions Status indicator Characteristics of relay outputs common to the er Max. breaking voltage Breaking current	State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response ti 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes On LCD screen for CD and XD tire range 5 →30 V DC 24 →250 V AC 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 RBT (Removable Terminal Blocks) versions: verify the rutilization category DC-12:24 V, 1.5 A Utilization category DC-13:24 V (L/R = 10 ms), 0.6 A		50 ms min. up to 255 ms State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr): 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes On LCD screen for CD and XD
Sensor type Input type Isolation between power supply and inputs Isolation between inputs Protection against polarity inversions Status indicator Characteristics of relay outputs common to the er Max. breaking voltage Breaking current	State 0 → 1 (50/60 Hz) In accordance with cycle time (Tc) and input response ti 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None None Yes On LCD screen for CD and XD Attire range 5 → 30 V DC 24 → 250 V AC 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 RBT (Removable Terminal Blocks) versions: verify the relation 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		50 ms min. up to 255 ms State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr): 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes On LCD screen for CD and XD
Sensor type Input type Isolation between power supply and inputs Isolation between inputs Protection against polarity inversions Status indicator Characteristics of relay outputs common to the end Max. breaking voltage Breaking current Electrical durability for 500 000 operating cycles	State 0 \rightarrow 1 (50/60 Hz) In accordance with cycle time (Tc) and input response ti 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None None Yes On LCD screen for CD and XD tire range $5 \rightarrow 30 \text{ V DC}$ $24 \rightarrow 250 \text{ V AC}$ 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 RBT (Removable Terminal Blocks) versions: verify the r 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		50 ms min. up to 255 ms State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr): 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes On LCD screen for CD and XD
Sensor type Input type Isolation between power supply and inputs Isolation between inputs Protection against polarity inversions Status indicator Characteristics of relay outputs common to the end Max. breaking voltage Breaking current Electrical durability for 500 000 operating cycles Max. Output Common Current	State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response ti 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None None Yes On LCD screen for CD and XD **tire range** 5 →30 V DC 24 →250 V AC 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 XE11 : 4 x 8 A relays, 2 x 5 A relays RBT (Removable Terminal Blocks) versions : verify the r Utilization category DC-12 : 24 V, 1.5 A Utilization category DC-12 : 230 V, 1.5 A Utilization category AC-15 : 230 V, 0.9 A 12 A for O8, O9, OA		50 ms min. up to 255 ms State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr): 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes On LCD screen for CD and XD
Sensor type Input type Isolation between power supply and inputs Isolation between inputs Protection against polarity inversions Status indicator Characteristics of relay outputs common to the er Max. breaking voltage Breaking current Electrical durability for 500 000 operating cycles Max. Output Common Current Minimum switching capacity	State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response ti 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes On LCD screen for CD and XD Interesting 5 →30 V DC 24 →250 V AC 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 RBT (Removable Terminal Blocks) versions: verify the relation 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 12 A for O8, O9, OA 10 mA (at minimum voltage of 12 V)		50 ms min. up to 255 ms State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr): 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes On LCD screen for CD and XD
Sensor type Input type Isolation between power supply and inputs Isolation between inputs Protection against polarity inversions Status indicator Characteristics of relay outputs common to the er Max. breaking voltage Breaking current Electrical durability for 500 000 operating cycles Max. Output Common Current Minimum switching capacity Minimum load	State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response ti 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None None Yes On LCD screen for CD and XD Itire range 5 →30 V DC 24 →250 V AC 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 XE10:4 x 5 A relays XR14:4 x 8 A relays, 2 x 5 A relays RBT (Removable Terminal Blocks) versions: verify the r Utilization category DC-12:24 V, 1.5 A Utilization category AC-15:230 V, 1.5 A Utilization category AC-15:230 V, 0.9 A 12 A for O8, O9, OA 10 mA (at minimum voltage of 12 V) 12 V, 10 mA		50 ms min. up to 255 ms State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr): 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes On LCD screen for CD and XD
Sensor type Input type Isolation between power supply and inputs Isolation between inputs Protection against polarity inversions Status indicator Characteristics of relay outputs common to the er Max. breaking voltage Breaking current Electrical durability for 500 000 operating cycles Max. Output Common Current Minimum switching capacity Minimum load	State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response ti 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes On LCD screen for CD and XD Itire range 5 →30 V DC 24 →250 V AC 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 XE10:4 x 5 A relays RR1 (Removable Terminal Blocks) versions: verify the relation category DC-12:24 V, 1.5 A Utilization category DC-13:24 V (L/R = 10 ms), 0.6 A Utilization category AC-15:230 V, 0.9 A 12 A for O8, O9, OA 10 mA (at minimum voltage of 12 V) 12 V, 10 mA Off load:10 Hz		50 ms min. up to 255 ms State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr): 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None Yes On LCD screen for CD and XD

2/11/2015 Off-cycle response time	Make 10 ms		www.crouzet.co	
Duilt in protections	Release 5 ms			
Built-in protections	Against overvoltages and overloads : None	Against short-circuits : None Against overvoltages and overloads : None		
Status indicator	On LCD screen for CD and XD			
Characteristics of product with DC power so	upplied			
Supply				
Nominal voltage	12 V DC	24 V DC		
Operating limits	-13 % / +20 % or 10.4 V DC→14.4 V DC (including ripple)	-20 % / +25 % or 19.2 V DC→30 V	DC (including ripple)	
mmunity from micro power cuts	≤ 1 ms (repetition 20 times)	≤ 1 ms (repetition 20		
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 \ XD10-XB10 with relay outputs : 4 \ W \ XD26-XB26 with solid state outputs : 5 \ W \ CB20-CD20 with relay outputs : 6 \ W \ XD26 with relay outputs : 6 \ W \ XD10-XB10 with extension : 8 \ W \ XD26-XB26 with extension : 10 \ W		
Protection against polarity inversions	Yes	Yes		
igital inputs (I1 to IA and IH to IY)				
nput voltage	12 V DC (-13 % / +20 %)		24 V DC (-20 % / +25 %)	
nput current	3.9 mA @ 10.44 V DC		2.6 mA @ 19.2 V DC	
	4.4 mA @ 12.0 V DC		3.2 mA @ 24 V DC	
	5.3 mA @ 14.4 VDC		4.0 mA @ 30.0 VDC	
nput impedance	2.7 kΩ		7.4 kΩ	
ogic 1 voltage threshold	≥ 7 V DC ≥ 2 mA		≥ 15 V DC ≥ 2.2 mA	
Making current at logic state 1 ogic 0 voltage threshold	≥2 mA ≤3 V DC		≥ 2.2 mA ≤ 5 V DC	
Logic 0 voltage threshold Release current at logic state 0	< 0.9 mA		< 0.75 mA	
Response time	1 →2 cycle times + 6 ms		1 →2 cycle times + 6 ms	
Maximum counting frequency	Inputs I1 & I2 : FBD (up to 6 k Hz) & Ladder Inputs I3 to IA & IH to IY : In accordance with input response time (Tr) : 1/ ((2 x Tc) + Tr)		Inputs 11 & I2 : FBD (up to 6 k Hz) & Ladder (1 k Hz) Inputs 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	
nput type	Resistive		Resistive	
solation between power supply and inputs	None		None	
solation 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)				
CB12-CD12-XD10-XB10	4 inputs IB →IE		4 inputs IB →IE	
CB20-CD20-XB26-XD26	6 inputs IB →IG		6 inputs IB →IG	
nputs used as analogue inputsonly in FBD				
Measurement range	$(0 \rightarrow 10 \text{ V}) \text{ or } (0 \rightarrow \text{V power supply})$		$(0 \rightarrow 10 \text{ V}) \text{ or } (0 \rightarrow \text{V power supply})$	
nput impedance	14 kΩ		12 kΩ	
nput voltage	14.4 V DC max.		30 V DC max.	
/alue of LSB	14 mV		29 mV	
nput type	Common mode		Common mode	
Resolution	10 bit at max. input voltage		10 bit at max. input voltage	
Conversion time	Controller cycle time		Controller cycle time	
Accuracy at 25 °C Accuracy at 55 °C	± 5 % ± 6.2 %		± 5 % ± 6.2 %	
Repeat accuracy at 55 °C	± 0.2 %		± 0.2 %	
solation between analogue channel and power su			± 2 % 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) 10 kΩ max.		2.2 kΩ/0.5 W (recommended)	
nute used so digital in the	IU N12 IIIAA.		10 kΩ max.	
nputs used as digital inputs	12 \ \ DC (42 0/ 1 20 0/ \		24 \\ DC \(\) 20 \(\) \\ \(\) \(\) \\	
nput voltage nput current	12 V DC (-13 % / +20 %) 0.7 mA @ 10.44 VDC		24 V DC (-20 % / +25 %) 1.6 mA @ 19.2 VDC	
nput current	0.7 mA @ 10.44 VDC 0.9 mA @ 12.0 VDC		1.6 mA @ 19.2 VDC 2.0 mA @ 24.0 V DC	
	1.0 mA @ 14.4VDC		2.5 mA @ 30.0 VDC	
nput impedance	14 kΩ		12 kΩ	
ogic 1 voltage threshold	≥7 V DC		≥ 15 VDC	
Making current at logic state 1	≥ 0.5 mA		≥ 1.2 mA	
ogic 0 voltage threshold	≤3 V DC		≤5 V DC	
Release current at logic state 0	≤ 0.2 mA		≤ 0.5 mA	
Response time	1 →2 cycle times	t roon one - time - (T.)	1 →2 cycle times	
Maximum counting frequency in FBD	In accordance with cycle time (Tc) and inpu 1/ ((2 x Tc) + Tr)	t response time (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	

Characteristics of relay outputs common to the	entire range		
Max. breaking voltage	5 →30 V DC 24 →250 V AC		
Max. Output Common Current	12A (10A UL) for O8, O9, OA		
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		
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		
Off-cycle 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	
1 WW dona diate datpat	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 Release ≤ 1 ms	Make ≤ 1 ms Release ≤ 1 ms	
Operating frequency	1 Maximum on inductive load	1 Maximum on inductive load	
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	14.11 Hz 56.45 Hz 112.90 Hz 225.80 Hz	

Accessories

PWM cyclic ratio

Max. Breaking current PWM

Max. cable length PWM

PWM accuracy at 120 Hz

PWM accuracy at 500 Hz

Туре	Description	Code
M3 Soft	Multilingual programming software containing specific library functions (CD-ROM)	88970111
PA	EEPROM memory cartridge	88970108
PA	3 m serial link cable : PC →Millenium 3	88970102
PA	USB cable 3 m : PC →Millenium 3	88970109
PA	Millenium 3 interface →Bluetooth® (class A 10 m)	88970104

 $0 \rightarrow 100 \%$ (256 steps for CD, XD and 1024 steps for XA)

< 5 % (20 % \rightarrow 80 %) load at 10 mA

< 10 % (20 % \rightarrow 80 %) load at 10 mA

On LCD screen for XD

451.59 Hz

1806.37 Hz

50 mA

20 m

 $0 \rightarrow 100 \%$ (256 steps for CD, XD and 1024 steps for XA)

< 5 % (20 % \rightarrow 80 %) load at 10 mA

On LCD screen for CD and XD

< 10 % (20 % \rightarrow 80 %) load at 10 mA

Comments

* to be marketed 1st quarter 2006

Dimensions (mm)

CB12 Smart

451.59 Hz

1806.37 Hz

50 mA

20 m

