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Smart "Compact" range without display CB20 Smart Part number 88974034



- "Modular" versions designed for application-specific functions
- No display or parameter-setting buttons to avoid tampering by unauthorised users

Part numbers

Туре	Input	Output	Supply
88974034 CB20 Smart	12 digital	8 relays 8 A	24 V AC

Specifications

General environment	charactoristics	for CB CD XD	YR YP and YE	nroduct types

Conformity to standards (with the low voltage directive and EMC directive) ### CECIN \$1191-2 (Zone B) ECCIN \$1000-6-2 (T) ECCIN \$1000-6-3 (T) ECCIN	Certifications	CE, UL, CSA, GL
ECEN 81131-2 (Zone B) ECEN 8100-6-2 (P) ECEN 81000-6-2 (P) ECEN 81000-6-3 (P) ECEN 81000-6-4 (P) ECEN 81000-6 (P) ECEN 81000-6 (P) ECEN 81000-6 (P)		
ECEN 61000-6-1 (*) Except configuration (88 970 1.1 or 88 970 250 or 88 970 270) + 88 970 241 class A (class B in a metal enclosure)	and EMC directive)	
EIC/EN 61000-6-4		IEC/EN 61000-6-2,
Conducted and radiated emissions Cisas B (na metal enclosure)		
Protection rating Not included Protection rating In accordance with IEC/EN 60529 : IP40 on front panel IP20 on terminal block IP20 on		
In accordance with IEC/EN 60529 :		
IP40 on front panel IP20 on terminal block Overvoltage category 3 in accordance with IEC/EN 60684-1 Degree : 2 in accordance with IEC/EN 61131-2 Max operating Altitude Operation : 2004 m Transport : 3048 m Immunity to wibrations IEC/EN 60068-2-6, test FC Immunity to shock IEC/EN 60068-2-27, test Ea Immunity to believe to the Impunity to the IEC/EN 60068-2-10, test Ea Immunity to ESD IEC/EN 61000-4-2, level 3 Immunity to radiated electrostatic fields IEC/EN 61000-4-3, Immunity to test transients (burst immunity) IEC/EN 61000-4-4, level 3 Immunity to fast transients (burst immunity) IEC/EN 61000-4-4, level 3 Immunity to shock waves IEC/EN 61000-4-4, 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 -40 → +70 °C in accordance with IEC/EN 60068-2-1 and IEC/EN 60068-2-2 Relative humidity Mounting On symmetrical DNI rail, 35 x 7.5 mm and 35 x 15 mm, or on panel (2 x Ø 4 mm)	· ·	
IP20 on terminal block	Protection rating	
Overvoltage category 3 in accordance with IEC/EN 60664-1 Population Degree : 2 in accordance with IEC/EN 61131-2 Max operating Altitude Operation : 2000 m Transport : 3048 m Mechanical resistance Immunity to bribations IEC/EN 60068-2-6, test Fc Immunity to shock IEC/EN 60068-2-7, test Ea Resistance to electrostatic discharge Immunity to shock IEC/EN 60068-2-1, test Ea Immunity to rediated electrostatic fields IEC/EN 61000-4-2, level 3 Immunity to radiated electrostatic fields IEC/EN 61000-4-3 Immunity to fast transients (burst immunity) IEC/EN 61000-4-3 Immunity to fast transients (burst immunity) IEC/EN 61000-4-1 Immunity to fast transients (burst immunity) IEC/EN 61000-4-1 Immunity to famped oscillatory waves IEC/EN 61000-4-1 Immunity to damped oscillatory waves IEC/EN 61000-4-1 Immunity to damped oscillatory waves IEC/EN 61000-4-12 Conducted and radiated emissions Class B (¹) in accordance with EN 55022, EN 55011 (CISPR22, CISPR11) group 1 (¹) Except configuration (88 970 1.1 or 88 970 1.1 or 88 970 1.2) + (88 970 250 or 88 970 270) + 88 970 271 cass A (class B in a metal enclosure) Operating temperature -40 →+70 °C in accordance with IEC/EN 60068-2-1 and IEC/EN 60068-2-2 Relative humidity JEC/EN 60068-2-2 Relative humidity JEC/EN 60068-2-3 in and 35 x 15 mm, or on panel (2 x Ø 4 mm)		·
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 Immunity to ESD IEC/EN 61000-4-2, level 3 Immunity to fast transients (burst immunity) IEC/EN 61000-4-3, level 3 Immunity to shock waves IEC/EN 61000-4-4, level 3 Immunity to shock waves IEC/EN 61000-4-5 Radio frequency in common mode IEC/EN 61000-4-5 Radio frequency in common mode 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 except CB and XB versions in VDC : -30 -++70 **C in accordance with IEC/EN 60068-2-1 and IEC/EN 60068-2-2 Relative humidity 5 % max. (no condensation or dripping water) in accordance with IEC/EN 6008-2-30 Mounting On symmetrical DIN rail, 35 x 7.5 mm and 35 x 15 mm, or on panel (2 x Ø 4 mm)	0	
Mechanical resistance Mechanical resistance Immunity to vibrations IEC/EN 60068-2-6, test Fc Immunity to shock IEC/EN 60068-2-17, test Ea Resistance to electrostatic discharge Immunity to statical electrostatic fields IEC/EN 61000-4-2, level 3 Immunity to radiated electrostatic fields IEC/EN 61000-4-4, level 3 Immunity to radiated electrostatic fields IEC/EN 61000-4-4, level 3 Immunity to radiated electrostatic fields IEC/EN 61000-4-4, level 3 Immunity to shock waves IEC/EN 61000-4-6, level 3 Voltage dips and breaks (AC) IEC/EN 61000-4-11 Immunity to damped oscillatory waves IEC/EN 61000-4-11 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 + 88 970 271) + 88 970 1.2) + (88 970 250 or 88 970 270 + 88 970 271) + 88 970 1.2 in accordance with IEC/EN 60068-2-1 and IEC/EN 60068-2-2 Storage 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 Relative humidity EC/EN 60068-2-2 Relative humidity On symmetrical DIN rail, 35 x 7.5 mm and 35 x 15 mm, or on panel (2 x Ø 4 mm)	· · · ·	
Transport : 3048 m Mechanical resistance Immunity to shock IEC/EN 60068-2-27, test Ea Immunity to shock IEC/EN 60068-2-27, test Ea Immunity to shock IEC/EN 60068-2-27, test Ea Immunity to ESD IEC/EN 61000-4-2, level 3 Immunity to radiated electrostatic fields IEC/EN 61000-4-3 Immunity to radiated electrostatic fields IEC/EN 61000-4-3 Immunity to shock waves 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 61000-4-1 Immunity to damped oscillatory waves IEC/EN 61000-4-12 (Sas 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 -40 -+70 °C in accordance with IEC/EN 60068-2-1 and IEC/EN 60068-2-2 Relative humidity EC/EN 60068-2-2 On symmetrical DIN rail, 35 x 7.5 mm and 35 x 15 mm, or on panel (2 x Ø 4 mm)		·
Immunity to shock IEC/EN 60068-2-27, fest Ea Immunity to ESD IEC/EN 61000-4-2, level 3 Immunity to radiated electrostatic fields IEC/EN 61000-4-3 Immunity to fast transients (burst immunity) IEC/EN 61000-4-3 Immunity to shock waves IEC/EN 61000-4-5, level 3 Immunity to shock waves IEC/EN 61000-4-5, level 3 Immunity to shock waves IEC/EN 61000-4-5, level 3 Immunity to shock waves IEC/EN 61000-4-1 Immunity to shock waves IEC/EN 61000-4-1 Immunity to damped oscillatory waves IEC/EN 61000-4-10 Immunity to damped oscillatory waves IEC/EN 61000-4-12 Immunity to shock waves IEC/EN 61000-4-12 Immu	Max operating Altitude	
Resistance to HF interference Immunity to ESD 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 61000-4-5 Radio frequency in common mode IEC/EN 61000-4-11 Immunity to damped oscillatory waves IEC/EN 61000-4-11 Immunity to damped oscillatory waves IEC/EN 61000-4-11 Immunity to damped oscillatory waves IEC/EN 61000-4-12 (Soor 88 970 250 or 88 970 270 + 88 970 1.1 or 88 970 1.2) + (88 970 250 or 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 IEC/EN 60068-2-2 Relative humidity 95 % max. (no condensation or dripping water) in accordance with IEC/EN 60068-2-8 and 5x x 7.5 mm and 35 x 15 mm, or on panel (2 x Ø 4 mm) Mounting On symmetrical DIN rail, 35 x 7.5 mm and 35 x 15 mm, or on panel (2 x Ø 4 mm)	Mechanical resistance	Immunity to vibrations IEC/EN 60068-2-6, test Fc
IEC/EN 61000-4-2, level 3 Immunity to radiated electrostatic fields IEC/EN 61000-4-3 Immunity to fast transients (burst immunity) IEC/EN 61000-4-3 Immunity to fast transients (burst immunity) IEC/EN 61000-4-4, level 3 Immunity to shock waves IEC/EN 61000-4-6, level 3 Immunity to shock waves IEC/EN 61000-4-6, level 3 Voltage dips and breaks (AC) 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 Immunity damped oscillatory waves I		·
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 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 61000-4-6, level 3 Voltage dips and breaks (AC) IEC/EN 61000-4-11 Immunity to damped oscillatory waves IEC/EN 61000-4-11 Immunity to damped oscillatory waves IEC/EN 61000-4-12 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) 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 IEC/EN 60068-2-2 Relative humidity ES % 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)	Resistance to electrostatic discharge	·
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 61000-4-5 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 IEC/EN 61000-4-12 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 2-0 -+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 Relative humidity Description of the properation of the pr		
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 61000-4-6, level 3 Voltage dips and breaks (AC) IEC/EN 61000-4-11 Immunity to damped oscillatory waves 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 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 Relative humidity Mounting On symmetrical DIN rail, 35 x 7.5 mm and 35 x 15 mm, or on panel (2 x Ø 4 mm)	Resistance to HF interference	
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) + 88 970 271 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 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)		
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IEC/EN 61000-4-16, 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 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 Relative humidity 95 % max. (no condensation or dripping water) in accordance with IEC/EN 60068-2-30 Mounting Mounting On symmetrical DIN rail, 35 x 7.5 mm and 35 x 15 mm, or on panel (2 x Ø 4 mm)		
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(*) 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 IEC/EN 60068-2-1 and 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)		
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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 IEC/EN 60068-2-1 and 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)		
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 IEC/EN 60068-2-2 Relative humidity -95 % max. (no condensation or dripping water) in accordance with IEC/EN 60068-2-30 Mounting -01 × 7.5 mm and 35 × 15 mm, or on panel (2 × Ø 4 mm)		· · · · · · · · · · · · · · · · · · ·
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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)	Storage temperature	
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)	Storage temperature	
Mounting On symmetrical DIN rail, 35 x 7.5 mm and 35 x 15 mm, or on panel (2 x Ø 4 mm)	Relative humidity	
	Mounting	
T IONIDIO WILL TOTALO -	Screw terminals connection capacity	Flexible wire with ferrule =
1 conductor : 0.25 to 2.5 mm ² (AWG 24AWG 14)		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)		1 conductor: 0.2 to 2.5 mm ² (AWG 25AWG 14)
Rigid wire =		Rigid wire =
1 conductor : 0.2 to 2.5 mm ² (AWG 25AWG 14)		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)		Also valid for spring cage connectors (ref 88 970 313 and 88 970 317 for the RBT range)

General characteristics

Operating temperature

-30 →+70 °C (DC) ;-20 →+70° C (AC) ;
Operating temperature @ 100 % (Relays 6A)

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Operating temperature @ 66 % (Relays 8A)

	Operating temperature @ 66 % (Relays 8A)		
Storage temperature	-40 →+80 °C		
Processing characteristics of CB, CD, XD & XB pr	**		
LCD display Programming method	CD, XD : Display with 4 lines of 18 characters Ladder or FBD/SFC (Grafcet)		
Program size	350 typical blocks		
	128 macros maximum		
Program momony	256 blocks maximum per macro Flash EEPROM		
Program memory Removable memory	EEPROM		
Data memory	368 bits/200 words		
Back-up time in the event of power failure	or orientation works Program and settings in the controller : 10 years Program and settings in the plug-in memory : 10 years Pata memory : 10 years		
Cycle time	Ladder : typically 20 ms FBD : 6 →90 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) 6 s/month (at 25 °C with user-definable correction of drift)		
Timer block accuracy Start up time on power up	1 % ± 2 cycle times < 1.2 s		
Characteristics of products with AC power suppli	ed		
Supply	24.V.AC	100 240 V AC	
Nominal voltage Operating limits	24 V AC -15 % / +20 %	100 →240 V AC -15 % / +10 %	
	or 20.4 V AC→28.8 V AC	or 85 V AC→264 V AC	
Supply frequency range	50/60 Hz (+4 % / -6 %)	50/60 Hz (+ 4 % / - 6 %) or 47 →53 Hz/57 →63 Hz	
Immunity from micro power cuts	or 47 →53 Hz/57 →63 Hz 10 ms (repetition 20 times)	10 ms (repetition 20 times)	
Max. absorbed power	CB12-CD12-XD10-XB10 : 4 VA	CB12-CD12-XD10-XB10 : 7 VA	
	CB20-CD20 : 6 VA	CB20-CD20: 11 VA	
	XD10-XB10 with extension - XD26-XB26 : 7.5 VA XD26-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	
Inputs			
Input voltage	24 V AC (-15 % / +20 %)	100 →240 V AC (-15 % / +10 %)	
Input current	4.4 mA @ 20.4 V AC	0.24 mA @ 85 V AC	
	5.2 mA @ 24.0 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 Response time with LADDER programming	< 0.5 mA 50 ms State 0 →1 (50/60 Hz)	< 0.5 mA 50 ms	
Response time with function blocks programming	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)	State 0 →1 (50/60 Hz)	
Maximum counting frequency	In accordance with cycle time (Tc) and input response time (Tr):	In accordance with cycle time (Tc) and input response time (Tr):	
Sensor type	1/ ((2 x Tc) + Tr) Contact or 3-wire PNP	1/ ((2 x Tc) + Tr) Contact or 3-wire PNP	
Input type	Resistive	Resistive	
Isolation between power supply and inputs	None	None	
Isolation between inputs	None	None	
Protection against polarity inversions Status indicator	Yes On LCD screen for CD and XD	Yes On LCD screen for CD and XD	
		OH LOD SHEEH IOLOD AND AND	
Characteristics of relay outputs common to the e	ntire range 5 →30 V DC		
	24 →250 V AC		
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		
	RBT (Removable Terminal Blocks) versions : verify the maximum of	current according to the type of connection used	
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		
Max. Output Common Current	Utilization category AC-15 : 230 V, 0.9 A 12 A for O8, O9, OA		
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		

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Status indicator	On LCD screen for CD and XD		
characteristics of product with DC power supplie	ed		
upply			
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 I	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		ith solid state outputs - XD10-XB10 with solid state outputs : 3 W
	CD12 : 1.5 W	XD10-XB10 with rela	·
	CD20 : 2.5 W	XD26-XB26 with solid	d state outputs : 5 W
	XD26-XB26 : 3 W		y outputs - XD26 with relay outputs : 6 W
	XD26-XB26 with extension : 5 W XD26 with solid state outputs : 2.5 W	XD10-XB10 with exte XD26-XB26 with exte	
Protection against polarity inversions	Yes	Yes	erision . To w
	165	163	
igital inputs (I1 to IA and IH to IY)	40.1/ DO / 40.0/ / 20.0/)		04)/100/(000///050/)
nput voltage	12 V DC (-13 % / +20 %)		24 V DC (-20 % / +25 %)
nput current	3.9 mA @ 10.44 V DC 4.4 mA @ 12.0 V DC		2.6 mA @ 19.2 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		≥ 15 V DC
Making current at logic state 1	≥ 2 mA		≥ 2.2 mA
ogic 0 voltage threshold	≤3 V DC		≤5 V DC
Release current at logic state 0	< 0.9 mA		< 0.75 mA
esponse time	1 →2 cycle times		1 →2 cycle times
Maximum counting frequency	Inputs I1 & I2 : Ladder (1 k Hz) & FBD (up to		Inputs I1 & I2 : Ladder (1 k Hz) & FBD (up to 6 k Hz)
	Inputs I3 to IA & IH to IY: In accordance with	cycle time (Tc) and	Inputs I3 to IA & IH to IY: In accordance with cycle time (Tc) an
Concor tuno	input response time (Tr) : 1/ ((2 x Tc) + Tr)		input response time (Tr) : 1/ ((2 x Tc) + Tr)
Sensor type Conforming to IEC/EN 61131-2	Contact or 3-wire PNP Type 1		Contact or 3-wire PNP Type 1
	• • • • • • • • • • • • • • • • • • • •		• • •
aput type	Resistive None		Resistive None
solation between power supply and inputs	None		None
solation between inputs Protection against polarity inversions	Yes		Yes
Status indicator	On LCD screen for CD and XD		On LCD screen for CD and XD
	On LOD screen for CD and XD		On EGD screen for GD and AD
nalogue or digital inputs (IB to IG)			
B12-CD12-XD10-XB10			4 inputs IB →IE
CB20-CD20-XB26-XD26	6 inputs IB →IG		6 inputs IB →IG
puts used as analogue inputs			
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			12 kΩ
nput voltage			30 V DC max.
/alue of LSB	14 mV, 4 mA		29 mV, 4 mA
nput type	Common mode		Common mode
desolution	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%
ccuracy at 55 °C epeat accuracy at 55 °C	± 6.2 % ± 2 %		± 6.2 % ± 2 %
solation between analogue channel and power supply	None		None
able length	10 m maximum, with shielded cable (sensor	not isolated)	10 m maximum, with shielded cable (sensor not isolated)
rotection against polarity inversions	,		Yes
otentiometer control	2.2 kΩ/0.5 W (recommended)		2.2 kΩ/0.5 W (recommended)
Cionionicio Control	10 kΩ max.		10 k Ω max.
puts used as digital inputs			
puts used as digital inputs	12 V DC (-13 % / +20 %)		24 V DC (-20 % / +25 %)
nput current	0.7 mA @ 10.44 VDC		1.6 mA @ 19.2 VDC
T	0.9 mA @ 12.0 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
laking current at logic state 1	≥ 0.5 mA		≥ 1.2 mA
ogic 0 voltage threshold	≤ 3 V DC		≤ 5 V DC
elease current at logic state 0	≤ 0.2 mA		≤ 0.5 mA
esponse time	1 →2 cycle times		1 →2 cycle times
laximum counting frequency	In accordance with cycle time (Tc) and input	response time (Tr):	In accordance with cycle time (Tc) and input response time (Tr
oncer type	1/ ((2 x Tc) + Tr)		1/ ((2 x Tc) + Tr)
ensor type	Contact or 3-wire PNP		Contact or 3-wire PNP
onforming to IEC/EN 61131-2	Type 1 Resistive		Type 1 Resistive
nput type			None
solation between power supply and inputs	None None		None
solation between inputs Protection against polarity inversions	Yes		Yes
tatus indicator	On LCD screen for CD and XD		On LCD screen for CD and XD
ratao maioatoi			SITE EST SOLOGITION OF AND AND
haracteristics of relay outputs common to the elax. breaking voltage	entire range 5 →30 V DC 24 →250 V AC		

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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 XP14 : 4 x 8 A relays 2 x 5 A relays	
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	
10 mA (at minimum voltage of 12 V)	
12 V, 10 mA	
Off load : 10 Hz At operating current : 0.1 Hz	
10,000,000 (operations)	
In accordance with IEC/EN 60947-1 and IEC/EN 60664-1: 4 kV	
Make 10 ms Release 5 ms	
Against short-circuits : None Against overvoltages and overloads : None	
On LCD screen for CD and XD	
CB12 : O4 XD26 : O4 →O7	CD12-XD10-XB10 : O4 CD20-XD26-XB26 : O4 →O7
* Only available with "FBD" programming language	
10.4 →30 V DC	19.2 →30 V DC
12-24 VDC	24 V DC
0.5 A	0.5 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 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 10 mA (at minimum voltage of 12 V) 12 V, 10 mA Off load: 10 Hz At operating current: 0.1 Hz 10,000,000 (operations) In accordance with IEC/EN 60947-1 and IEC/EN 6064-1: 4 kV Make 10 ms Release 5 ms Against short-circuits: None Against overvoltages and overloads: None On LCD screen for CD and XD CB12: O4 XD26: O4 → O7 * Only available with "FBD" programming language 10.4 → 30 V DC 12-24 VDC

	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
Frequency (Hz)		
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	$0 \rightarrow 100$ % (256 steps for CD, XD and 1024 steps for XA)	$0 \rightarrow$ 100 % (256 steps for CD, XD and 1024 steps for XA)
Max. Breaking current PWM	50 mA	50 mA
Max. cable length PWM (m)	20	20
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 % \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

Accessories

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

Comments

* to be marketed 1st quarter 2006

Dimensions (mm) CB20 Smart

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