

Digital sandwich extension XE10 Part number 88970323



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

num	

	Туре	Inputs	Outputs	Supply
88970323	XE10	6 digital	4 relays 5 A (1 of which is a changeover relay)	100 →240 V AC

Specifications

General environment characteristics for CB, CD, X	
Certifications	CE, UL, CSA, GL
Conformity to standards (with the low voltage directive and EMC directive)	IEC/EN 61131-2 (Open equipment) 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 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 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/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 (+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 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 = 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)

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

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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 blocks maximum per macro
	or
	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
	Program and settings in the plug-in memory : 10 years
	Data memory: 10 years
Cycle time	FBD : 6 →90 ms (typically 20 ms)
	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)
	6 s/month (at 25 °C with user-definable correction of drift)
Timer block accuracy	1 % ± 2 cycle times
Start up time on power up	<1,2s

Characteristics of products with AC power supplied

Supply		
Nominal voltage	24 V AC	100 →240 V AC
Operating limits	-15 % / +20 % or 20.4 V AC→28.8 V AC	-15 % / +10 % or 85 V AC→264 V AC
Supply frequency range	50/60 Hz (+4 % / -6 %) or 47 →53 Hz/57 →63 Hz	50/60 Hz (+ 4 % / - 6 %) or 47 \rightarrow 53 Hz/57 \rightarrow 63 Hz
Immunity from micro power cuts	10 ms (repetition 20 times)	10 ms (repetition 20 times)
Max. absorbed power	CB12-CD12-XD10-XB10 : 4 VA CB20-CD20 : 6 VA XD10-XB10 with extension : 7.5 VA XD26-XB26 : 7.5 VA XD26-XB26 with extension : 10 VA	CB12-CD12-XD10-XB10: 7 VA CB20-CD20: 11 VA XD10-XB10 with extension: 12 VA XD26-XB26: 12 VA XD26-XB26 with extension: 17 VA
Isolation voltage	1780 V AC	1780 V AC

Inputs

4.4 mA @ 20.4 V AC 5.2 mA @ 24.0 V AC 6.3 mA @ 28.8 V AC 0.75 mA @ 264 V AC 0.75 mA 0.20 m	Inputs		
5.2 mA @ 24.0 V AC 6.3 mA @ 22.8 V AC 0.75 mA @ 264 V AC 0.75 mA 0.75 mA 0.75 mA @ 264 V AC 0.5 mA 0.	Input voltage	24 V AC (-15 % / +20 %)	100 →240 V AC (-15 % / +10 %)
Logic 1 voltage threshold ≥ 14 V AC ≥ 79 V AC Making current at logic state 1 ≥ 2 mA ≥ 5 V AC Release current at logic state 0 Response time with LADDER programming 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) Configurable in increments of 10 ms 50 ms min. up to 255 ms State 0 → 1 (50/60 Hz) Maximum counting frequency Maximum counting frequency In accordance with cycle time (Tc) and input response time (Tr) 1/((2 x Tc) + Tr) Contact or 3-wire PNP Resistive Solation between power supply and inputs None None Protection against polarity inversions ≥ 79 V AC ≥ 79 V AC ≥ 79 V AC ≥ 79 V AC > 0.17 mA ≥ 20 V AC (≤ 28 V AC : XE10, XR06, XR10, XR14) (2 0.5 mA 50 ms 50 ms min. up to 255 ms 50 ms min. up to 255 ms 51 m accordance with cycle time (Tc) and input response time (Tr): 1/((2 x Tc) + Tr) 1/((2 x Tc) + Tr) Contact or 3-wire PNP Resistive None None None Protection against polarity inversions Yes Yes	Input current	5.2 mA @ 24.0 V AC	
Making current at logic state 1 2 mA 2 5 V AC 3 2 V AC (≤ 28 V AC : XE10, XR06, XR10, XR14) 3 50 mA 3 50 ms 5 10 maccordance with cycle time (Tc) and input response time (Tr) 1 / ((2 x Tc) + Tr) 2 Contact or 3-wire PNP 7 Contact or 3-wire PNP 7 Contact or 3-wire PNP 7 Resistive 8 Resistive 8 Resistive 8 Resistive 8 None 9 None 9 None 9 None 9 None 9 Yes	Input impedance	4.6 kΩ	350 kΩ
Logic 0 voltage threshold	Logic 1 voltage threshold	≥ 14 V AC	≥ 79 V AC
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) State 0 →1 (50/60 Hz) Response time with function blocks programming 50 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) Maximum counting frequency In accordance with cycle time (Tc) and input response time (Tr): 1/ ((2 x Tc) + Tr) Sensor type Contact or 3-wire PNP Resistive Resistive None None Protection against polarity inversions Yes Co.5 mA <0.5 mA Co.5 mA 50 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) In accordance with cycle time (Tc) and input response time (Tr): 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive Resistive None None Yes	Making current at logic state 1	> 2 mA	> 0.17 mA
State 0 →1 (50/60 Hz) Response time with function blocks programming State 0 →1 (50/60 Hz) Configurable in increments of 10 ms 50 ms min. up to 255 ms 50 ms min. up to 255 ms 50 ms min. up to 255 ms 51ate 0 →1 (50/60 Hz) Maximum counting frequency In accordance with cycle time (Tc) and input response time (Tr): 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive Resistive None None Protection against polarity inversions State 0 →1 (50/60 Hz) Configurable in increments of 10 ms 50 ms min. up to 255 ms 50 ms min. up to 255 ms 50 ms min. up to 255 ms 51ate 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 Resistive None None Yes	Logic 0 voltage threshold	≤5 V AC	≤ 20 V AC (≤ 28 V AC : XE10, XR06, XR10, XR14)
State 0 \rightarrow 1 (50/60 Hz) Response time with function blocks programming Configurable in increments of 10 ms 50 ms min. up to 255 ms State 0 \rightarrow 1 (50/60 Hz) Maximum counting frequency In accordance with cycle time (Tc) and input response time (Tr): 1/ ((2 x Tc) + Tr) In accordance with cycle time (Tc) and input response time (Tr): 1/ ((2 x Tc) + Tr) Contact or 3-wire PNP Resistive Resistive Resistive Rould input response time Resistive Resistive None None Protection against polarity inversions 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 Resistive None None	Release current at logic state 0	< 0.5 mA	< 0.5 mA
50 ms min. up to 255 ms State 0 →1 (50/60 Hz) Maximum counting frequency In accordance with cycle time (Tc) and input response time (Tr): $1/((2 \times Tc) + Tr)$ In accordance with cycle time (Tc) and input response time (Tr): $1/((2 \times Tc) + Tr)$ Contact or 3-wire PNP Resistive Resistive Resistive Resistive Solation between power supply and inputs None None None Protection against polarity inversions Yes Sol ms min. up to 255 ms State 0 →1 (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr): $1/((2 \times Tc) + Tr)$ Contact or 3-wire PNP Resistive Resistive None None Yes	Response time with LADDER programming		
$1/((2 \times Tc) + Tr) $	Response time with function blocks programming	50 ms min. up to 255 ms	50 ms min. up to 255 ms
nput type Resistive Resistive solation between power supply and inputs None None solation between inputs None None Protection against polarity inversions Yes Yes	Maximum counting frequency		In accordance with cycle time (Tc) and input response time (Tr) : $1/((2 \times Tc) + Tr)$
solation between power supply and inputs None None None None Protection against polarity inversions Yes Yes	Sensor type	Contact or 3-wire PNP	Contact or 3-wire PNP
solation between inputs Protection against polarity inversions Yes None Yes Yes	Input type	Resistive	Resistive
Protection against polarity inversions Yes Yes	Isolation between power supply and inputs	None	None
	Isolation between inputs	None	None
Status indicator On LCD screen for CD and XD On LCD screen for CD and XD	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 → 30 V DC
- wax. breaking voltage	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 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	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
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

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Characteristics of product with DC power supplied

Nominal voltage	12 V DC	24 V DC	
Operating limits	-13 % / +20 %	-20 % / +25 %	
	or 10.4 V DC→14.4 V DC (including ripple)	or 19.2 V DC→30 V	DC (including ripple)
mmunity from micro power cuts	≤ 1 ms (repetition 20 times)	≤ 1 ms (repetition 20	times)
Max. absorbed power	CB12 with solid state outputs : 1.5 W	CB12-CD12-CD20 w	ith solid state outputs - XD10-XB10 with solid state outputs : 3 W
	CD12 with solid state outputs . 1.5 W	XD10-XB10 with rela	
	CD20: 2.5 W		d state outputs : 5 W
	XD26-XB26 : 3 W	CB20-CD20 with rela	
	XD26-XB26 with extension : 5 W	XD26 with relay outp	
	XD26 with solid state outputs : 2.5 W	XD10-XB10 with exte	
Destruction and instruction to the control of		XD26-XB26 with exte	ension: 10 vv
Protection against polarity inversions	Yes	Yes	
igital inputs (I1 to IA and IH to IY)			
put 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		≥ 15 V DC
laking current at logic state 1	≥ 2 mA		≥ 2.2 mA
ogic 0 voltage threshold	≤3 V DC		≤5 V DC
elease current at logic state 0	< 0.9 mA		< 0.75 mA
esponse time	1 →2 cycle times + 6 ms		1 →2 cycle times + 6 ms
laximum counting frequency	Inputs I1 & I2 : FBD (up to 6 k Hz) & Ladder (1 k Hz)	Inputs I1 & I2 : FBD (up to 6 k Hz) & Ladder (1 k Hz)
	Inputs I3 to IA & IH to IY : In accordance with		Inputs I3 to IA & IH to IY : In accordance with cycle time (Tc) ar
	input response time (Tr) : 1/ ((2 x Tc) + Tr)	, ,	input response time (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		Type 1
put type	Resistive		Resistive
solation between power supply and inputs	None		None
solation between inputs	None		None
rotection against polarity inversions	Yes		Yes
tatus indicator	On LCD screen for CD and XD		On LCD screen for CD and XD
	On EOD sciedinion OD and AD		On EOD Sciectifier OD and AD
nalogue or digital inputs (IB to IG)			
B12-CD12-XD10-XB10	4 inputs IB →IE		4 inputs IB →IE
B20-CD20-XB26-XD26	6 inputs IB →IG		6 inputs IB →IG
puts 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	14.4 v DC max.		29 mV
nput type	Common mode 10 bit at max. input voltage		Common mode
Resolution	, c		10 bit at max. input voltage
Conversion time	Controller cycle time		Controller cycle time
			•
occuracy at 25 °C	±5%		± 5 %
ccuracy at 55 °C	± 6.2 %		±5% ±6.2%
ccuracy at 55 °C			± 5 %
ccuracy at 55 °C epeat accuracy at 55 °C	± 6.2 %		±5% ±6.2%
ccuracy at 55 °C epeat accuracy at 55 °C solation between analogue channel and power supply	± 6.2 % ± 2 %	not isolated)	±5% ±6.2% ±2%
ccuracy at 55 °C epeat accuracy at 55 °C colation between analogue channel and power supply able length	± 6.2 % ± 2 % None	not isolated)	± 5 % ± 6.2 % ± 2 % None
ccuracy at 25 °C ccuracy at 55 °C epeat accuracy at 55 °C solation between analogue channel and power supply table length rotection against polarity inversions otentiometer control	± 6.2 % ± 2 % None 10 m maximum, with shielded cable (sensor	not isolated)	± 5 % ± 6.2 % ± 2 % None 10 m maximum, with shielded cable (sensor not isolated)
ccuracy at 55 °C epeat accuracy at 55 °C olation between analogue channel and power supply able length rotection against polarity inversions	± 6.2 % ± 2 % None 10 m maximum, with shielded cable (sensor Yes	not isolated)	± 5 % ± 6.2 % ± 2 % None 10 m maximum, with shielded cable (sensor not isolated) Yes
ccuracy at 55 °C epeat accuracy at 55 °C colation between analogue channel and power supply able length rotection against polarity inversions otentiometer control	$\begin{array}{l} \pm 6.2 \ \% \\ \pm 2 \ \% \\ \text{None} \\ 10 \ \text{m} \ \text{maximum, with shielded cable (sensor Yes} \\ 2.2 \ \text{k}\Omega/0.5 \ \text{W (recommended)} \end{array}$	not isolated)	\pm 5 % $\\$ \pm 6.2 % $\\$ \pm 2 % $\\$ None 10 m maximum, with shielded cable (sensor not isolated) Yes 2.2 k $\Omega/0.5$ W (recommended)
ccuracy at 55 °C epeat accuracy at 55 °C colation between analogue channel and power supply able length rotection against polarity inversions otentiometer control puts used as digital inputs	\pm 6.2 % \pm 2 % None 10 m maximum, with shielded cable (sensor Yes 2.2 kΩ/0.5 W (recommended) 10 kΩ max.	not isolated)	\pm 5 % \pm 6.2 % \pm 2 % None 10 m maximum, with shielded cable (sensor not isolated) Yes 2.2 k $\Omega/0.5$ W (recommended) 10 k Ω max.
ccuracy at 55 °C epeat accuracy at 55 °C colation between analogue channel and power supply able length rotection against polarity inversions otentiometer control puts used as digital inputs uput voltage	\pm 6.2 % \pm 2 % None 10 m maximum, with shielded cable (sensor Yes 2.2 kΩ/0.5 W (recommended) 10 kΩ max. 12 V DC (-13 % / +20 %)	not isolated)	\pm 5 % $\\$ \pm 6.2 % $\\$ \pm 2 % $\\$ None 10 m maximum, with shielded cable (sensor not isolated) Yes 2.2 kΩ/0.5 W (recommended) 10 kΩ max.
ccuracy at 55 °C epeat accuracy at 55 °C colation between analogue channel and power supply able length rotection against polarity inversions otentiometer control puts used as digital inputs uput voltage	\pm 6.2 % \pm 2 % None 10 m maximum, with shielded cable (sensor Yes 2.2 kΩ/0.5 W (recommended) 10 kΩ max. 12 V DC (-13 % / +20 %) 0.7 mA @ 10.44 VDC	not isolated)	\pm 5 % $\\$ \pm 6.2 % $\\$ \pm 2 % $\\$ None 10 m maximum, with shielded cable (sensor not isolated) Yes 2.2 kΩ/0.5 W (recommended) 10 kΩ max.
ccuracy at 55 °C epeat accuracy at 55 °C olation between analogue channel and power supply able length rotection against polarity inversions otentiometer control puts used as digital inputs put voltage	\pm 6.2 % \pm 2 % None 10 m maximum, with shielded cable (sensor Yes 2.2 kΩ/0.5 W (recommended) 10 kΩ max. 12 V DC (-13 % / +20 %) 0.7 mA @ 10.44 VDC 0.9 mA @ 12.0 VDC	not isolated)	\pm 5 % $\\$ \pm 6.2 % $\\$ \pm 2 % $\\$ None 10 m maximum, with shielded cable (sensor not isolated) Yes 2.2 kΩ/0.5 W (recommended) 10 kΩ max. 24 V DC (-20 % / +25 %) 1.6 mA @ 19.2 VDC 2.0 mA @ 24.0 V DC
ccuracy at 55 °C epeat accuracy at 55 °C epeat accuracy at 55 °C solation between analogue channel and power supply able length rotection against polarity inversions otentiometer control puts used as digital inputs aput voltage aput current	\pm 6.2 % \pm 2 % None 10 m maximum, with shielded cable (sensor Yes 2.2 kΩ/0.5 W (recommended) 10 kΩ max. 12 V DC (-13 % / +20 %) 0.7 mA @ 10.44 VDC 0.9 mA @ 12.0 VDC 1.0 mA @ 14.4VDC	not isolated)	\pm 5 % $\\$ \pm 6.2 % $\\$ \pm 2 % $\\$ None 10 m maximum, with shielded cable (sensor not isolated) Yes 2.2 kΩ/0.5 W (recommended) 10 kΩ max. 24 V DC (-20 % / +25 %) 1.6 mA @ 19.2 VDC 2.0 mA @ 24.0 V DC 2.5 mA @ 30.0 VDC
ccuracy at 55 °C epeat accuracy at 55 °C olation between analogue channel and power supply able length rotection against polarity inversions otentiometer control puts used as digital inputs put voltage put current put impedance	\pm 6.2 % \pm 2 % None 10 m maximum, with shielded cable (sensor Yes 2.2 kΩ/0.5 W (recommended) 10 kΩ max. 12 V DC (-13 % / +20 %) 0.7 mA @ 10.44 VDC 0.9 mA @ 12.0 VDC 1.0 mA @ 14.4VDC 14 kΩ	not isolated)	\pm 5 % $\\$ \pm 6.2 % $\\$ \pm 2 % $\\$ None 10 m maximum, with shielded cable (sensor not isolated) Yes 2.2 k Ω /0.5 W (recommended) 10 k Ω max.
ccuracy at 55 °C epeat accuracy at 55 °C olation between analogue channel and power supply able length rotection against polarity inversions otentiometer control puts used as digital inputs put voltage put current put impedance ogic 1 voltage threshold	\pm 6.2 % \pm 2 % None 10 m maximum, with shielded cable (sensor Yes 2.2 kΩ/0.5 W (recommended) 10 kΩ max. 12 V DC (-13 % / +20 %) 0.7 mA @ 10.44 VDC 0.9 mA @ 12.0 VDC 1.0 mA @ 14.4VDC 14 kΩ ≥ 7 V DC	not isolated)	± 5 % ± 6.2 % ± 2 % None 10 m maximum, with shielded cable (sensor not isolated) Yes 2.2 kΩ/0.5 W (recommended) 10 kΩ max. 24 V DC (-20 % / +25 %) 1.6 mA @ 19.2 VDC 2.0 mA @ 24.0 V DC 2.5 mA @ 30.0 VDC 12 kΩ ≥ 15 VDC
ccuracy at 55 °C epeat accuracy at 55 °C olation between analogue channel and power supply able length rotection against polarity inversions otentiometer control puts used as digital inputs put voltage put current put impedance ogic 1 voltage threshold aking current at logic state 1	± 6.2 % ± 2 % None 10 m maximum, with shielded cable (sensor Yes 2.2 kΩ/0.5 W (recommended) 10 kΩ max. 12 V DC (-13 % / +20 %) 0.7 mA @ 10.44 VDC 0.9 mA @ 12.0 VDC 1.0 mA @ 14.4VDC 14 kΩ ≥ 7 V DC ≥ 0.5 mA	not isolated)	± 5 % ± 6.2 % ± 2 % None 10 m maximum, with shielded cable (sensor not isolated) Yes 2.2 kΩ/0.5 W (recommended) 10 kΩ max. 24 V DC (-20 % / +25 %) 1.6 mA @ 19.2 VDC 2.0 mA @ 24.0 V DC 2.5 mA @ 30.0 VDC 12 kΩ ≥ 15 VDC ≥ 1.2 mA
ccuracy at 55 °C epeat accuracy at 55 °C olation between analogue channel and power supply able length rotection against polarity inversions otentiometer control puts used as digital inputs put voltage put current put impedance ogic 1 voltage threshold laking current at logic state 1 ogic 0 voltage threshold	± 6.2 % ± 2 % None 10 m maximum, with shielded cable (sensor Yes 2.2 kΩ/0.5 W (recommended) 10 kΩ max. 12 V DC (-13 % / +20 %) 0.7 mA @ 10.44 VDC 0.9 mA @ 12.0 VDC 1.0 mA @ 14.4VDC 14 kΩ ≥ 7 V DC ≥ 0.5 mA ≤ 3 V DC	not isolated)	± 5 % ± 6.2 % ± 2 % None 10 m maximum, with shielded cable (sensor not isolated) Yes 2.2 kΩ/0.5 W (recommended) 10 kΩ max. 24 V DC (-20 % / +25 %) 1.6 mA @ 19.2 VDC 2.0 mA @ 24.0 V DC 2.5 mA @ 30.0 VDC 12 kΩ ≥ 15 VDC ≥ 1.2 mA ≤ 5 V DC
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ccuracy at 55 °C epeat accuracy at 55 °C olation between analogue channel and power supply able length rotection against polarity inversions otentiometer control puts used as digital inputs put voltage put current put impedance ogic 1 voltage threshold laking current at logic state 1 ogic 0 voltage threshold elease current at logic state 0 esponse time	± 6.2 % ± 2 % None 10 m maximum, with shielded cable (sensor Yes 2.2 kΩ/0.5 W (recommended) 10 kΩ max. 12 V DC (-13 % / +20 %) 0.7 mA @ 10.44 VDC 0.9 mA @ 12.0 VDC 1.0 mA @ 14.4VDC 14 kΩ ≥ 7 V DC ≥ 0.5 mA ≤ 3 V DC ≤ 0.2 mA 1 →2 cycle times		± 5 % ± 6.2 % ± 2 % None 10 m maximum, with shielded cable (sensor not isolated) Yes 2.2 kΩ/0.5 W (recommended) 10 kΩ max. 24 V DC (-20 % / +25 %) 1.6 mA @ 19.2 VDC 2.0 mA @ 24.0 V DC 2.5 mA @ 30.0 VDC 12 kΩ ≥ 15 VDC ≥ 1.2 mA ≤ 5 V DC ≤ 0.5 mA 1 →2 cycle times
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04/12/2014 www.crouzet.com

Breaking current CB-CD-XD10-XB10-XR06-XR10: 8 A	J4/ 12/2014	www.ciouzet.com
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	Breaking current	6 : 8 x 8 A relays, 2 x 5 A relays 5 A relays
Minimum load 12 V, 10 mA Maximum rate Off load : 10 Hz At operating current : 0.1 Hz Mechanical life 10,000,000 (operations)	Electrical durability for 500 000 operating cycles	category DC-13 : 24 V (L/R = 10 ms), 0.6 A category AC-12 : 230 V, 1.5 A
Maximum rate Off load : 10 Hz At operating current : 0.1 Hz Mechanical life 10,000,000 (operations)	Minimum switching capacity	minimum voltage of 12 V)
At operating current : 0.1 Hz Mechanical life 10,000,000 (operations)	Minimum load	ıA
	Maximum rate	
Voltage for withstanding shocks. In accordance with IEC/EN 60947-1 and IEC/EN 60664-1 : 4 kV	Mechanical life	O (operations)
Voltage for Withstalleling Shocks III accordance With 1EO/EN 00004 1.4 KV	Voltage for withstanding shocks	nce with IEC/EN 60947-1 and IEC/EN 60664-1 : 4 kV
Off-cycle response time Make 10 ms Release 5 ms	Off-cycle response time	
Built-in protections Against short-circuits: None Against overvoltages and overloads: None	Built-in protections	
Status indicator On LCD screen for CD and XD	Status indicator	reen for CD and XD

Digital / PWM solid state output

Digital / PWM solid state output		
PWM solid state output*	CB12: O4	CD12-XD10-XB10 : O4
	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 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 →100 % (256 steps for CD, XD and 1024 steps for XA)
Max. Breaking current PWM	50 mA	50 mA
Max. cable length PWM	20 m	20 m
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

107,6

90

Dimensions (mm) XE10

72 9, 27

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