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<u>Crouzet Automation</u> 88970324

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#### **Distributor of Crouzet Automation: Excellent Integrated System Limited**

Datasheet of 88970324 - I/O MODULE 6 DIG 4 RELAY 24VAC

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#### Digital sandwich extension XE10 Part number 88970324



- 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

Part numbers				
	Type	Inputs	Outputs	Supply
889703	<b>24</b> XE10	6 digital	4 relays 5 A (1 of which is a changeover relay)	24 V AC

#### Specifications

General environment characteristics for C	. CD.	XD, XB	. XR and XE	product types
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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 61000-6-3 (*) 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
Conducted and radiated emissions	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)
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 mm² (AWG 24AWG 14)  2 conductors 0.25 to 0.75 mm² (AWG 24AWG 18)  Semi-rigid wire =  1 conductor: 0.2 to 2.5 mm² (AWG 25AWG 14)  Rigid wire =  1 conductor: 0.2 to 2.5 mm² (AWG 25AWG 14)  2 conductors 0.2 to 1.5 mm² (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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2/11/2015			www.crouzet.coi	
LCD display	CD, XD : Display with 4 lines of 18 characters			
Programming method Function blocks / SCF (Grafcet) or Ladder			n nor moore	
Program size	8 Kb: 350 typical blocks, 64 macros maximum, 256 bloc or	ks maximur	ii 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			
	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)			
Timer block accuracy	6 s/month (at 25 °C with user-definable correction of di 1 % ± 2 cycle times	TITT)		
Start up time on power up	< 1,2 s			
Characteristics of products with AC power suppl	led			
Supply				
Nominal voltage	24 V AC	100 →240		
Operating limits	-15 % / +20 %	-15 % / +		
Supply frequency range	or 20.4 V AC→28.8 V AC 50/60 Hz (+4 % / -6 %)		C→264 V AC	
- Cappry frequency failige	or $47 \rightarrow 53 \text{ Hz/57} \rightarrow 63 \text{ Hz}$	50/60 Hz	(+ 4 % / - 6 %) or 47 →53 Hz/57 →63 Hz	
Immunity from micro power cuts	10 ms (repetition 20 times)	10 ms (re	petition 20 times)	
Max. absorbed power	CB12-CD12-XD10-XB10 : 4 VA	CB12-CD	12-XD10-XB10 : 7 VA	
	CB20-CD20 : 6 VA		20 : 11 VA	
	XD10-XB10 with extension : 7.5 VA XD26-XB26 : 7.5 VA		10 with extension : 12 VA 26 : 12 VA	
	XD26-XB26 : 7.3 VA 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 0.75 mA @ 264 V AC	
	6.3 mA @ 28.8 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 Logic 0 voltage threshold	> 2 mA ≤ 5 V AC		> 0.17 mA ≤ 20 V AC (≤ 28 V AC : XE10, XR06, XR10, XR14)	
Release current at logic state 0			< 0.5 mA	
Response time with LADDER programming	< 0.5 mA 50 ms		50 ms	
	State 0 →1 (50/60 Hz)			
Response time with function blocks programming	Configurable in increments of 10 ms			
	50 ms min. up to 255 ms		50 ms min. up to 255 ms	
Maximum counting frequency	State 0 →1 (50/60 Hz)	imo (Tr) :	State $0 \rightarrow 1$ (50/60 Hz) In accordance with cycle time (Tc) and input response time (Tr):	
Maximum counting frequency		In accordance with cycle time (Tc) and input response time (Tr):		
1/ ( (2 x lc) + lr)  Sensor type 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	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			
24 →250 V AC				
Breaking current	CB-CD-XD10-XB10-XR06-XR10 : 8 A			
XD26-XB26 : 8 x 8 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-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, 1.3 A			
Max. Output Common Current				
Minimum switching capacity	capacity 10 mA (at minimum voltage of 12 V)			
inimum load 12 V, 10 mA				
Maximum rate	Off load: 10 Hz			
Machanical life	At operating current : 0.1 Hz			
Mechanical life Voltage for withstanding shocks	10,000,000 (operations) In accordance with IFC/FN 60947-1 and IFC/FN 60664-1 · 4 kV			
oltage for withstanding shocks In accordance with IEC/EN 60947-1 and IEC/EN 60664-1 : 4 kV  If-cycle response time Make 10 ms				
Release 5 ms				
uilt-in protections Against short-circuits : None				
Built-in protections				
Built-in protections  Status indicator	Against short-circuits : None Against overvoltages and overloads : None On LCD screen for CD and XD			



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Operating limits         -13 % / +20 % or 10.4 V DC →14.4 V DC (including ripple)         -20 or 15.4 V DC →14.4 V DC (including ripple)           Immunity 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 CD12 : 1.5 W CD20 : 2.5 W XD26-XB26 : 3 W XD26-XB26 with extension : 5 W XD26-XB26 with solid state outputs : 2.5 W XD26-XB26 with soli	V DC % / +25 % 9.2 V DC→30 V DC (including ripple) ms (repetition 20 times) 12-CD12-CD20 with solid state outputs - XD10-XB10 with solid state outputs : 3 W 10-XB10 with relay outputs : 4 W 26-XB26 with solid state outputs : 5 W 20-CD20 with relay outputs : 6 W 26 with relay outputs : 6 W 26-XB26 with extension : 8 W 26-XB26 with extension : 10 W S  24 V DC (-20 % / +25 %) 2.6 mA @ 19.2 V DC 3.2 mA @ 24 V DC 4.0 mA @ 30.0 VDC 7.4 kΩ ≥ 15 V DC ≥ 2.2 mA ≤ 5 V DC < 0.75 mA 1 →2 cycle times + 6 ms
or 10.4 V DC—14.4 V DC (including ripple)   or munulity from micro power cuts   5.1 ms (repetition 20 times)   5.2 ms (20 ± 2.5 Ws	9.2 V DC→30 V DC (including ripple) ms (repetition 20 times)     12-CD12-CD20 with solid state outputs - XD10-XB10 with solid state outputs : 3 W     10-XB10 with relay outputs : 4 W     26-XB26 with solid state outputs : 5 W     20-CD20 with relay outputs : 6 W     26 with relay outputs : 6 W     10-XB10 with extension : 8 W     26-XB26 with extension : 10 W     S
S   ms (repetition 20 times)   S   1 ms (repetition 20 times)	ms (repetition 20 times)  12-CD12-CD20 with solid state outputs - XD10-XB10 with solid state outputs : 3 W  10-XB10 with relay outputs : 4 W  26-XB26 with solid state outputs : 5 W  20-CD20 with relay outputs : 6 W  26 with relay outputs : 6 W  10-XB10 with extension : 8 W  26-XB26 with extension : 10 W  3  24 V DC (-20 % / +25 %)  2.6 mA @ 19.2 V DC  3.2 mA @ 24 V DC  4.0 mA @ 30.0 VDC  7.4 kΩ  ≥ 15 V DC  ≥ 2.2 mA  ≤ 5 V DC  < 0.75 mA
CB12 with solid state outputs : 1.5 W   CD12 : 2.5 W   CD23 : 2.5 W   CD25 : 2	12-CD12-CD20 with solid state outputs - XD10-XB10 with solid state outputs : 3 W 10-XB10 with relay outputs : 4 W 26-XB26 with solid state outputs : 5 W 20-CD20 with relay outputs : 6 W 26-XB26 with relay outputs : 6 W 10-XB10 with extension : 8 W 10-XB10 with extension : 10
CB12 with solid state outputs: 1.5 W   CD2: 1.5 W   CD2	10-XB10 with relay outputs : 4 W 26-XB26 with solid state outputs : 5 W 20-CD20 with relay outputs : 6 W 26 with relay outputs : 6 W 10-XB10 with extension : 8 W 26-XB26 with extension : 10 W 3  24 V DC (-20 % / +25 %) 2.6 mA @ 19.2 V DC 3.2 mA @ 24 V DC 4.0 mA @ 30.0 VDC 7.4 kΩ ≥ 15 V DC ≥ 2.2 mA ≤ 5 V DC < 0.75 mA
CD12:1.5 W   XD12   CD2:2.5 W   XD26-XB28:3 W   XD26-XB28 with extension:5 W   XD12	26-XB26 with solid state outputs : 5 W 20-CD20 with relay outputs : 6 W 26 with relay outputs : 6 W 10-XB10 with extension : 8 W 26-XB26 with extension : 10 W 3  24 V DC (-20 % / +25 %) 2.6 mA @ 19.2 V DC 3.2 mA @ 24 V DC 4.0 mA @ 30.0 VDC 7.4 kΩ ≥ 15 V DC ≥ 2.2 mA ≤ 5 V DC < 0.75 mA
CD20 : 2.5 W   XD26-XB26 : 31 W   XD26-XB26 : 32 W   XD26-XB26 : 3	20-CD20 with relay outputs: 6 W 26 with relay outputs: 6 W 10-XB10 with extension: 8 W 26-XB26 with extension: 10 W 5  24 V DC (-20 % / +25 %) 2.6 mA @ 19.2 V DC 3.2 mA @ 24 V DC 4.0 mA @ 30.0 VDC 7.4 kΩ ≥ 15 V DC ≥ 2.2 mA ≤ 5 V DC < 0.75 mA
XD26-XB26 3 W   XD26-XB26 with extension : 5 W   XD26 with solid state outputs : 2.5 W   XD26 with solid state output impedance   2.7 K   XD26 with solid state output impedance   2.7 K   XD26 with solid state output : 2.5 W   XD26 with solid state outputs : 2.5 W   XD26 with solid state output : 2.5 W   XD26 with solid state output : 2.5 W   XD26 with solid state outputs : 2.5 W   XD26 with solid state output : 2.5 W   XD26 with	26 with relay outputs: 6 W 10-XB10 with extension: 8 W 26-XB26 with extension: 10 W 3  24 V DC (-20 % / +25 %) 2.6 mA @ 19.2 V DC 3.2 mA @ 24 V DC 4.0 mA @ 30.0 VDC 7.4 kΩ ≥ 15 V DC ≥ 2.2 mA ≤ 5 V DC < 0.75 mA
XD26-XB26 with extension : 5 W XD26 with solid state outputs : 2.5 W XD26 with solid state output voltage input current	10-XB10 with extension : 8 W 26-XB26 with extension : 10 W 5  24 V DC (-20 % / +25 %) 2.6 mA @ 19.2 V DC 3.2 mA @ 24 V DC 4.0 mA @ 30.0 VDC 7.4 kΩ ≥ 15 V DC ≥ 2.2 mA ≤ 5 V DC < 0.75 mA
XD26 with solid state outputs : 2.5 W   XD2	26-XB26 with extension : 10 W  24 V DC (-20 % / +25 %)  2.6 mA @ 19.2 V DC  3.2 mA @ 24 V DC  4.0 mA @ 30.0 VDC  7.4 kΩ  ≥ 15 V DC  ≥ 2.2 mA  ≤ 5 V DC  < 0.75 mA
Protection against polarity inversions  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Y	24 V DC (-20 % / +25 %) 2.6 mA @ 19.2 V DC 3.2 mA @ 24 V DC 4.0 mA @ 30.0 VDC 7.4 kΩ ≥ 15 V DC ≥ 2.2 mA ≤ 5 V DC < 0.75 mA
Inputs (If to IA and IH to IY) Input voltage Input current Input voltage Input current Input limpedance Inp	24 V DC (-20 % / +25 %) 2.6 mA @ 19.2 V DC 3.2 mA @ 24 V DC 4.0 mA @ 30.0 VDC 7.4 kΩ ≥ 15 V DC ≥ 2.2 mA ≤ 5 V DC < 0.75 mA
12 V DC (-13 % / +20 %)	2.6 mA @ 19.2 V DC 3.2 mA @ 24 V DC 4.0 mA @ 30.0 VDC 7.4 kΩ ≥ 15 V DC ≥ 2.2 mA ≤ 5 V DC < 0.75 mA
2,9 m A @ 10.44 V DC   4,4 m A @ 12.0 V DC   5,3 m A @ 14.4 V DC   2,7 kΩ   2,7	2.6 mA @ 19.2 V DC 3.2 mA @ 24 V DC 4.0 mA @ 30.0 VDC 7.4 kΩ ≥ 15 V DC ≥ 2.2 mA ≤ 5 V DC < 0.75 mA
4.4 mA @ 12.0 V DC	3.2 mA @ 24 V DC 4.0 mA @ 30.0 VDC 7.4 kΩ ≥ 15 V DC ≥ 2.2 mA ≤ 5 V DC < 0.75 mA
5,3 mA @ 14.4 VDC	4.0 mA @ 30.0 VDC 7.4 kΩ ≥ 15 V DC ≥ 2.2 mA ≤ 5 V DC < 0.75 mA
aput impedance ogic 1 voltage threshold ogic 1 voltage threshold ogic 2 voltage threshold ogic 0 voltage threshold ogic 0 voltage threshold ogic 0 voltage threshold ogic 0 voltage threshold s 3 V DC clease current at logic state 0 clease problem current current and current current current and current curren	7.4 kΩ ≥ 15 V DC ≥ 2.2 mA ≤ 5 V DC < 0.75 mA
agic 1 voltage threshold  aking current at logic state 1 ≥ 2 mA  gogic 0 voltage threshold ≤ 3 V D C  telease current at logic state 0 < 0.9 mA  tesponse time 1 → 2 cycle times + 6 ms  Inputs 11 & 12 : FBD (up to 6 k Hz) & Ladder (1 k Hz)  Inputs 13 to 1A & IH to 1Y : In accordance with cycle input response time (Tr) : 1/ ((2 x Tc) + Tr)  Contact or 3-wire PNP  Type 1 Type 1 Resistive  None  solation between power supply and inputs  None  solation between inputs None  rotection against polarity inversions Yes  tatus indicator On LCD screen for CD and XD  altique of LSB  aput voltage  aput impedance  aput voltage  Control SB  controlled  Common mode  to the XB  couracy at 25 °C  sceuracy	≥ 15 V DC ≥ 2.2 mA ≤ 5 V DC < 0.75 mA
Asking current at logic state 1   ≥ 2 mA	≥ 2.2 mA ≤ 5 V DC < 0.75 mA
Lefease current at logic state 0  Lefease current at logic state 0  Lefease current at logic state 0  Lesponse time  1 →2 cycle times + 6 ms  Inputs I1 & I2 : FBD (up to 6 k Hz) & Ladder (1 k Hz Inputs I3 to IA & IH to IY : In accordance with cycle input response time (Tr) : 1/ ((2 x Tc) + Tr)  Contact or 3-wire PNP  Conforming to IEC/EN 61131-2  Type 1  Resistive  Solation between power supply and inputs  Solation between inputs  None  Ves  Contact or 3-wire PNP  Resistive  Solation between inputs  None  Ves  Contact or 3-wire PNP  Resistive  Solation between inputs  None  Ves  Contact or 3-wire PNP  Resistive  Solation between inputs  None  Ves  Contact or 3-wire PNP  Resistive  Solation between inputs  None  Ves  Contact or 3-wire PNP  Resistive  Solation between inputs  None  Ves  Contact or 3-wire PNP  Resistive  Solation between inputs  None  Ves  Contact or 3-wire PNP  Resistive  Solation between inputs  None  Ves  Contact or 3-wire PNP  Resistive  Solation between inputs  None  A inputs IB → IE  Solation Delta IB → II  Solation Delta IB	≤ 5 V DC < 0.75 mA
elease current at logic state 0  aximum counting frequency  Inputs I1 & I2 : FBD (up to 6 k Hz) & Ladder (1 k Hz Inputs I3 to IA & IH to IY : In accordance with cycle input response time (Tr) : 1/ ((2 x Tc) + Tr)  ensor type  contact or 3-wire PNP  contact or 3-wire PNP  Type 1  Type 1  Resistive  volation between power supply and inputs  volation between inputs  None  rotection against polarity inversions  alogue or digital inputs (IB to IG)  B12-CD12-XD10-XB10  B20-CD20-XB26-XD26  puts used as analogue inputsonly in FBD  leasurement range  put voltage  put voltage  14.4 V DC max.  alue of LSB  put vype  Common mode  esolution  onversion time  couracy at 25 °C  couracy at 25 °C  couracy at 25 °C  couracy at 25 °C  couracy at 55 °C  depart accuracy at 55 °C  colation between analogue channel and power supply  put sused as digital inputs  put voltage  12. V DC (-13 % / +20 %)  None  12. V DC (-13 % / +20 %)  0.7 mA @ 10.44 VDC  0.9 mA @ 12.0 VDC  1.0 mA @ 14.4VDC	≤ 5 V DC < 0.75 mA
telease current at logic state 0  telesponse time  1 →2 cycle times + 6 ms  Inputs 11 & 12 : FBD (up to 6 k Hz) & Ladder (1 k Hz Inputs 13 to 1A & IH to 1Y : In accordance with cycle input response time (Tr) : 1/( (2 x Tc) + Tr)  Contact or 3-wire PNP  Type 1  Type 1  Type 1  Type 1  Resistive  None  Solation between power supply and inputs  None  Solation between inputs  Tyes  Total color against polarity inversions  Total color and XD  A inputs IB →IE  6 inputs IB →IE  6 inputs IB →IE  6 inputs IB →IE  10 yut sued as analogue inputsonly in FBD  Resistive  Type 1  Resistive  None  14 kΩ  14 kΩ  15 yet inputs IB →IE  16 inputs IB →IE  17 yet inputs IB →IE  18 yet inputs IB →IE  19 yet impedance  19 yet impedance  19 yet impedance  10 yet or (0 →V power supply)  11 yet ye  12 yet impedance  13 yet input sued as analogue channel and power supply  14 kΩ  15 yet input yet impedance  16 yet input yet input voltage  17 yet input yet input voltage  18 yet input yet input voltage  19 yet input yet input voltage  19 yet input yet input voltage  20 yet input yet input voltage  21 yet input input voltage  22 yet input yet input voltage  22 yet input yet input voltage  22 yet input yet input voltage  19 yet input input voltage  10 m m maximum, with shielded cable (sensor not isc  yet input yet input inputs  10 yet input input input inputs  10 yet input input inputs  11 yet input input inputs  12 yet input inputs  12 yet input inputs  13 yet i	< 0.75 mA
1 → 2 cycle times + 6 ms	
Inputs I1 & I2 : FBD (up to 6 k Hz) & Ladder (1 k Hz Inputs I3 to IA & IH to IY : In accordance with cycle input response time (Tr) : 1/ ((2 x Tc) + Tr)  ensor type	
Inputs I3 to IA & IH to IY: In accordance with cycle input response time (Tr): 1/ ((2 x Tc) + Tr) input response time (Tr): 1/ ((2 x Tc) + Tr) input response time (Tr): 1/ ((2 x Tc) + Tr) input response time (Tr): 1/ ((2 x Tc) + Tr) input sponse time (Tr): 1/ ((2 x Tc) + Tr) input	•
input response time (Tr) : 1/( (2 x Tc) + Tr)  conforming to IEC/EN 61131-2  uput type Resistive  solation between power supply and inputs  solation between inputs  Trotection against polarity inversions  tatus indicator  natogue or digital inputs (IB to IG)  B12-CD12-XD10-XB10  B22-CD20-XB26-XD26  puts used as analogue inputsonly in FBD  leasurement range  uput voltage  falue of LSB  uput type  controller cycle time  couracy at 25 °C  couracy at 25 °C  couracy at 55 °C  depeta accuracy at 55 °C  depeta a	
Contact or 3-wire PNP	
Type 1  Type 2  Type 1  Type 2  Type 1  Type 2  Type 1  Type 2  Type 3  Type 1  Type 4  Type 3  Type 1  Type 3  Type 4  Type 3  Type 4  Type 5  Type 5  Type 1  Type 6  Type 1  Type 3  Type 1  Type	input response time (Tr) : 1/ ( (2 x Tc) + Tr)
Resistive None None None None None None None Non	Contact or 3-wire PNP
Solation between power supply and inputs  Solation between inputs  Frotection against polarity inversions  Frotection agains	Type 1
None rotection against polarity inversions tatus indicator  nalogue or digital inputs (IB to IG)  B12-CD12-XD10-XB10  B20-CD20-XB26-XD26  B20-CD20-XB26-XD26  Duts used as analogue inputsonly in FBD  leasurement range  (0 →10 V) or (0 →V power supply)  put impedance  14 kΩ  put type  solution  10 bit at max. input voltage  couracy at 25 °C  couracy at 25 °C  couracy at 55 °C  depeat accuracy at 55 °C  epeat accuracy at 55 °C  epeat accuracy at 55 °C  colotion between analogue channel and power supply  able length  rotection against polarity inversions  otentiometer control  2.2 kΩ/0.5 W (recommended)  10 kΩ max.  puts used as digital inputs  put voltage  12 V DC (-13 % / +20 %)  put used as digital inputs  put impedance  14 kΩ  2 7 V DC	Resistive
tatus indicator  nalogue or digital inputs (IB to IG)  B12-CD12-XD10-XB10  B20-CD20-XB26-XD26  puts used as analogue inputsonly in FBD  leasurement range  (0 →10 V) or (0 →V power supply)  put impedance  14 kΩ  put type  esolution  conversion time  couracy at 25 °C  couracy at 55 °C  epeat accuracy at 55 °C  epeat acc	None
Protection against polarity inversions Status indicator  Characteristics (B to IG)  Characteristics	None
Status indicator         On LCD screen for CD and XD           Inalogue or digital inputs (IB to IG)           Inalogue or digital inputs (IB to IG)           Instance (ID = ID	Yes
Inalogue or digital inputs (IB to IG)  IB12-CD12-XD10-XB10  IB22-CD20-XB26-XD26  IB22-CD20-XB26-XD26  IB20-CD20-XB26-XD26  IB20-CD20-XB26  IB20-CD	On LCD screen for CD and XD
### A specific content of the first of the	011 205 0010011 101 05 d.1.d / 15
BE20-CD20-XB26-XD26  Apputs used as analogue inputsonly in FBD  Measurement range Apput impedance Apput voltage  Apput voltage  Apput type  Apput ty	
The puts used as analogue inputsonly in FBD  Measurement range  10 →10 V) or (0 →V power supply)  14 kΩ  19put impedance  14 kΩ  14 mV  Common mode  Resolution  10 bit at max. input voltage  Controller cycle time  Couracy at 25 °C  4 5 %  Recuracy at 55 °C  Repeat accuracy a	4 inputs IB →IE
leasurement range $(0 \rightarrow 10 \text{ V})$ or $(0 \rightarrow \text{V})$ power supply) input impedance $14 \text{ k}\Omega$ input voltage $14.4 \text{ V}$ DC max. The voltage $14.4 \text{ V}$ DC max is input voltage $14.4 \text{ V}$ DC moversion time $14.4 \text{ V}$ DC moversion time $14.4 \text{ V}$ DC controller cycle time $14.4 \text{ V}$ DC controller cycle time $14.4 \text{ V}$ DC moversion time $14.4 \text{ C}$ m	6 inputs IB →IG
Measurement range $(0 \rightarrow 10 \text{ V})$ or $(0 \rightarrow \text{V})$ power supply) input impedance $14 \text{ k}\Omega$ $\Omega$ input voltage $14.4 \text{ V}$ DC max. $\Omega$ input type $\Omega$ Common mode $\Omega$ is a conversion time $\Omega$ conversion time $\Omega$ conversion time $\Omega$ conversion time $\Omega$ couracy at 25 °C $\Omega$ is a conversion between analogue channel and power supply $\Omega$ in $\Omega$ maximum, with shielded cable (sensor not ison $\Omega$ input voltage $\Omega$ input voltage $\Omega$ input voltage $\Omega$ input current $\Omega$ in $\Omega$ in $\Omega$ in $\Omega$ input impedance $\Omega$ in $\Omega$	
Aput impedance   14 kΩ   14.4 V DC max.   14.4 V DC moversion time   14.4 V DC m	$(0 \rightarrow 10 \text{ V})$ or $(0 \rightarrow \text{V power supply})$
14.4 V DC max.	12 kΩ
Adue of LSB       14 mV         Apput type       Common mode         Resolution       10 bit at max. input voltage         Conversion time       Controller cycle time         Accuracy at 25 °C       ± 5 %         Repeat accuracy at 55 °C       ± 6.2 %         Repeat accuracy at 55 °C       ± 2 %         Solation between analogue channel and power supply       None         Rable length       10 m maximum, with shielded cable (sensor not isolated to a point in the shielded cable	
Applit type     Common mode       Resolution     10 bit at max. input voltage       Conversion time     Controller cycle time       Accuracy at 25 °C     ± 5 %       Accuracy at 55 °C     ± 6.2 %       Repeat accuracy at 55 °C     ± 2 %       Solation between analogue channel and power supply     None       Protection against polarity inversions     Yes       Protection against polarity inversions     Yes       Potentiometer control     2.2 kΩ/0.5 W (recommended)       Applits used as digital inputs     12 V DC (-13 % / +20 %)       Applit current     0.7 mA @ 10.44 VDC       0.9 mA @ 12.0 VDC     1.0 mA @ 14.4VDC       Applit impedance     14 kΩ       Applit impedance     14 kΩ       Applit impedance     2 7 V DC	30 V DC max.
tesolution 10 bit at max. input voltage Conversion time Conv	29 mV
Conversion time  Controller cycle time  ± 5 %  ± 6.2 %  tepeat accuracy at 55 °C  ± 2 %  Solation between analogue channel and power supply  None  To maximum, with shielded cable (sensor not iso  Yes  2.2 kΩ/0.5 W (recommended)  10 kΩ max.  To puts used as digital inputs  To put voltage  12 ∨ DC (-13 % / +20 %)  10 -7 mA @ 10.44 ∨DC  10 mA @ 14.4 ∨DC	Common mode
± 5 %   ± 6.2 %   ± 6.2 %   ± 2 %   Solation between analogue channel and power supply   None   2able length   10 m maximum, with shielded cable (sensor not ison protection against polarity inversions   Yes   2.2 kΩ/0.5 W (recommended)   10 kΩ max.   2.2 kΩ/0.5 W (recommended)   10 kΩ max.   2.2 kΩ/0.5 W (recommended)   2.2 kΩ/0.	10 bit at max. input voltage
Accuracy at 55 °C       ± 6.2 %         Repeat accuracy at 55 °C       ± 2 %         Solation between analogue channel and power supply       None         Protection against polarity inversions       Yes         Potentiometer control       2.2 kΩ/0.5 W (recommended)         10 kΩ max.       12 V DC (-13 % / +20 %)         Apput sused as digital inputs       12 V DC (-13 % / +20 %)         Apput current       0.7 mA @ 10.44 VDC         0.9 mA @ 12.0 VDC       1.0 mA @ 14.4VDC         Apput impedance       14 kΩ         Apput woltage threshold       ≥ 7 V DC	Controller cycle time
tepeat accuracy at 55 °C  solation between analogue channel and power supply  solable length  10 m maximum, with shielded cable (sensor not iso  rotection against polarity inversions  Yes  rotentiometer control  2.2 kΩ/0.5 W (recommended) 10 kΩ max.  12 V DC (-13 % / +20 %)  nput voltage  12 V DC (-13 % / +20 %)  0.7 mA @ 10.44 VDC  0.9 mA @ 12.0 VDC  1.0 mA @ 14.4VDC	±5%
tepeat accuracy at 55 °C  solation between analogue channel and power supply  solable length  10 m maximum, with shielded cable (sensor not iso  rotection against polarity inversions  Yes  rotentiometer control  2.2 kΩ/0.5 W (recommended) 10 kΩ max.  12 V DC (-13 % / +20 %)  nput voltage  12 V DC (-13 % / +20 %)  0.7 mA @ 10.44 VDC  0.9 mA @ 12.0 VDC  1.0 mA @ 14.4VDC	± 6.2 %
None sable length 10 m maximum, with shielded cable (sensor not iso rotection against polarity inversions rotection against polarity inversions rotentiometer control 2.2 kΩ/0.5 W (recommended) 10 kΩ max.  **puts used as digital inputs **put voltage** 12 V DC (-13 % / +20 %) 10.7 mA @ 10.44 VDC 10.9 mA @ 12.0 VDC 1.0 mA @ 14.4VDC  **put impedance**  **	± 2 %
able length 10 m maximum, with shielded cable (sensor not iso rotection against polarity inversions  Yes  2.2 kΩ/0.5 W (recommended) 10 kΩ max.  puts used as digital inputs  uput voltage 12 V DC (-13 % / +20 %) 0.7 mA @ 10.44 VDC 0.9 mA @ 12.0 VDC 1.0 mA @ 14.4VDC  uput impedance 14 kΩ  ogic 1 voltage threshold  ≥ 7 V DC	None
rotection against polarity inversions  Yes  otentiometer control  2.2 kΩ/0.5 W (recommended) 10 kΩ max.  puts used as digital inputs  uput voltage  12 V DC (-13 % / +20 %) 0.7 mA @ 10.44 VDC 0.9 mA @ 12.0 VDC 1.0 mA @ 14.4VDC  uput impedance 14 kΩ  ogic 1 voltage threshold  ≥ 7 V DC	
2.2 kΩ/0.5 W (recommended)   10 kΩ max.	, , , , , , , , , , , , , , , , , , , ,
10 kΩ max.  puts used as digital inputs  uput voltage 12 V DC (-13 % / +20 %)  uput current 0.7 mA @ 10.44 VDC  0.9 mA @ 12.0 VDC  1.0 mA @ 14.4VDC  uput impedance 14 kΩ  ogic 1 voltage threshold ≥ 7 V DC	Yes
12 V DC (-13 % / +20 %)   12 V DC (-10 mA @ 10.44 VDC (-10 mA @ 14.4VDC (-10 mA @ 14.4VDC (-10 mA	2.2 kΩ/0.5 W (recommended)
put voltage 12 V DC (-13 % / +20 %) put current 0.7 mA @ 10.44 VDC 0.9 mA @ 12.0 VDC 1.0 mA @ 14.4VDC  sput impedance 14 kΩ ogic 1 voltage threshold ≥ 7 V DC	10 kΩ max.
put current  0.7 mA @ 10.44 VDC  0.9 mA @ 12.0 VDC  1.0 mA @ 14.4VDC  12 kΩ  14 kΩ  27 V DC  27 V DC	
0.9 mA @ 12.0 VDC 1.0 mA @ 14.4VDC 10 mput impedance 14 kΩ 2 7 V DC	24 V DC (-20 % / +25 %)
0.9 mA @ 12.0 VDC 1.0 mA @ 14.4VDC 10 mput impedance 14 kΩ 2 7 V DC	1.6 mA @ 19.2 VDC
1.0 mA @ 14.4VDC  1.0 mA @ 14.4VDC  1.0 mA @ 2.14 kΩ  2.10 mA @ 2.14	2.0 mA @ 24.0 V DC
put impedance 14 kΩ ogic 1 voltage threshold ≥ 7 V DC	2.5 mA @ 30.0 VDC
ogic 1 voltage threshold ≥7 V DC	12 kΩ
	≥ 15 VDC
Latting out one at logic state 1	≥ 1.2 mA
ogic 0 voltage threshold ≤ 3 V DC	≤ 5 V DC
telease current at logic state 0 ≤ 0.2 mA	≤ 0.5 mA
esponse time 1 →2 cycle times	1 →2 cycle times
In accordance with cycle time (Tc) and input response	
1/ ( (2 x Tc) + Tr)	1/ ( (2 x Tc) + Tr)
ensor type Contact or 3-wire PNP	
onforming to IEC/EN 61131-2 Type 1	Contact or 3-wire PNP
pput type Resistive	
solation between power supply and inputs  None	Contact or 3-wire PNP
solation between inputs None	Contact or 3-wire PNP Type 1
Protection against polarity inversions Yes	Contact or 3-wire PNP Type 1 Resistive
Status indicator On LCD screen for CD and XD	Contact or 3-wire PNP Type 1 Resistive None None
	Contact or 3-wire PNP Type 1 Resistive None None Yes
haracteristics of relay outputs common to the entire range	Contact or 3-wire PNP Type 1 Resistive None None
ax. breaking voltage 5 → 30 V DC	Contact or 3-wire PNP Type 1 Resistive None None Yes
24 →250 V AC ax. Output Common Current 12A (10A UL) for O8, O9, OA	Contact or 3-wire PNP Type 1 Resistive None None Yes



# **Distributor of Crouzet Automation: Excellent Integrated System Limited**Datasheet of 88970324 - I/O MODULE 6 DIG 4 RELAY 24VAC

Contact us: sales@integrated-circuit.com Website: www.integrated-circuit.com

www.crouzet.com

12/1-1/2013		www.crouzet.cor
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 Solid State Sulpat	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

### Dimensions (mm) XE10

