

# Smart "Compact" range with display CD20 Smart Part number 88974053



- Modular" versions designed for application-specific functions
  - LCD with 4 lines of 18 characters and configurable backlighting

	Туре	Input	Output	Supply
88974053	CD20 Smart	12 digital	8 relays 8 A	100 →240 V AC
pecificatio	ns			
General env Certifications		for CB, CD, XD, XB, XR and XE CE, UL, CSA, GL	product types	
	standards (with the low volta	age directive IEC/EN 61131-2 (Op IEC/EN 61131-2 (Zo IEC/EN 61000-6-2, IEC/EN 61000-6-3 (* IEC/EN 61000-6-4	ne B) *	70 250 or 88 970 270) + 88 970 241 class A (class B in a metal enc
Earthing		Not included		
Protection rat	ing	In accordance with IP40 on front panel IP20 on terminal blo		
Overvoltage	category	3 in accordance with	h IEC/EN 60664-1	
Pollution		Degree : 2 in accord	dance with IEC/EN 61131-2	
Max operatin	g Altitude	Operation : 2000 m Transport : 3048 m		
Mechanical n	esistance		ns IEC/EN 60068-2-6, test Fc EC/EN 60068-2-27, test Ea	
Resistance to	electrostatic discharge	Immunity to ESD IEC/EN 61000-4-2, I	evel 3	
Resistance to	HF interference	Immunity to radiated IEC/EN 61000-4-3 Immunity to fast trai IEC/EN 61000-4-4, I Immunity to shock of IEC/EN 61000-4-5 Radio frequency in I IEC/EN 61000-4-6 IEC/EN 61000-4-11 Immunity to damped IEC/EN 61000-4-12	nsients (burst immunity) evel 3 waves common mode evel 3 reaks (AC)	
Conducted a	nd radiated emissions	(*) Except configura	dance with EN 55022, EN 55011 (CISPF ation (88 970 1.1 or 88 970 1.2) + 970 270) + 88 970 241 class A (class B	
Operating ter	·			dance with IEC/EN 60068-2-1 and IEC/EN 60068-2-2
Storage temp		IEC/EN 60068-2-2	ordance with IEC/EN 60068-2-1 and	
Relative humi		IEC/EN 60068-2-30	densation or dripping water) in accorda	
Mounting		-	I rail, 35 x 7.5 mm and 35 x 15 mm, or or	n panel (2 x Ø 4 mm)
Screw termin	als connection capacity	2 conductors 0.25 to Semi-rigid wire = 1 conductor : 0.2 to Rigid wire = 1 conductor : 0.2 to 2 conductors 0.2 to Tightening torque =	o 2.5 mm <sup>2</sup> (AWG 24AWG 14) o 0.75 mm <sup>2</sup> (AWG 24AWG 18) 2.5 mm <sup>2</sup> (AWG 25AWG 14) 2.5 mm <sup>2</sup> (AWG 25AWG 14) 1.5 mm <sup>2</sup> (AWG 25AWG 16)	

General characteristics Operating temperature

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

# 11/03/2013

www.crouzet.com

1,00,2010	
	Operating temperature @ 66 % (Relays 8A)
Storage temperature	-40 -+80 °C
LCD display	Display with 4 lines of 18 characters, white characters on a blue background
Processing characteristics of CB, CD, X	D & XB product types
LCD display	CD, XD : Display with 4 lines of 18 characters
Programming method	Ladder or FBD/SFC (Grafcet)
Program size	350 typical blocks 128 macros maximum 256 blocks maximum per macro
Program memory	Flash EEPROM
Removable memory	EEPROM
Data memory	368 bits/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	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	1 % ± 2 cycle times
Start up time on power up	< 1,2 s

#### 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 - 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 - 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 5.2 mA @ 24.0 V AC 6.3 mA @ 28.8 V AC	0.24 mA @ 85 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)
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)	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)
Sensor type	Contact or 3-wire PNP	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	$5 \rightarrow 30 \vee DC$ 24 $\rightarrow 250 \vee AC$
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
Response time	Make 10 ms Release 5 ms

11/03/2013		www.crouzet.com
Built-in protections	Against short-circuits : None	
	Against overvoltages and overloads : None	
Status indicator	On LCD screen for CD and XD	

StandardsV 100Al V 100 AllConside frainV 100 All V 100 A	Status indicator	On LCD screen for CD and XD		
Manua data'Y UC'Y UCOriently Link'Y UC'Y UCOriently Li	Characteristics of product with DC power sup	oplied		
Manua data'Y UC'Y UCOriently Link'Y UC'Y UCOriently Li	Sumply			
Openangemin15 % 1-20 %20 % 1-20 %minutables minutables power take1 in a papelion 20 inter1 minutables power takeinter accords power take1 in a papelion 20 inter20 minutables power takeinter accords power take20 minutables power take20 minutables power takeinter accords power take20 minutables power take20 minutables power takeinter accords power take20 minutables power take20 minutables power takeinter accords power take20 minutables power take20 minutables power takeinter accords power take20 minutables power take20 minutables power takeinter accords power take20 minutables power take20 minutables power takeinter accords power take20 minutables power take20 minutables power takeinter accords power take20 minutables power take20 minutables power takeinter accords power take20 minutables power take20 minutables power takeinter accords power take20 minutables power take20 minutables power takeinter accords power take20 minutables power take20 minutables power takeinter accords power take20 minutables power take20 minutables power takeinter accords power take20 minutables power take20 minutables power takeinter accords power take20 minutables power take20 minutables power takeinter accords power take20 minutables power take20 minutables power takeinter accords power take20 minutables power take20 minutables power takeinter acc		(0)(50		
Second and seco	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			
Standby Decision membrane Log State         I membrane Log State	Operating limits			
Max. attembed prove         CH2 or invaried starts origins : 1.9 W         CH2 or invaried starts origins : 2.9 W         CH2 or invaried starts orinvaried starts origins : 2.9 W         CH2 or		( <b>• • • • • • • • • •</b>		
bits         Dist         Dist <t< td=""><td>Immunity from micro power cuts</td><td>≤ 1 ms (repetition 20 times)</td><td>≤ 1 ms (repetition 20</td><td>times)</td></t<>	Immunity from micro power cuts	≤ 1 ms (repetition 20 times)	≤ 1 ms (repetition 20	times)
C200. 2.5 W         K224-363.0 with add sinker option into upper (1) is the option is the optio	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
NGG NGG NG		CD12 : 1.5 W	XD10-XB10 with rela	ay outputs : 4 W
X228-X80 who starts or UN         X210-X80 bit starts of UN         X210-X80 bit starts of UN           Production points (100 km and Ho 17)         Ye         Ye           Explain injust (10 km and Ho 17)         X210-X80 bit starts of UN         X210-X80 bit starts of UN           Explain injust (10 km and Ho 17)         X210-X60 bit starts of UN         X210-X60 bit starts of UN           Explain injust (10 km and Ho 17)         X210-X60 bit starts of UN         X210-X60 bit starts of UN           Explain injust (10 km and Ho 17)         X210-X60 bit starts of UN         X210-X60 bit starts of UN           Explain injust (10 km and Ho 17)         X210-X60 bit starts of UN         X210-X60 bit starts of UN           Explain injust (10 km and Ho 17)         X210-X60 bit starts of UN         X210-X60 bit starts of UN           Explain injust (10 km and Ho 17)         X210-X60 bit starts of UN         X210-X60 bit starts of UN           Explain injust (10 km and Ho 17)         X210-X60 bit starts of UN         X210-X60 bit starts of UN           Explain injust (10 km and Ho 17)         X210-X60 bit starts of UN         X220-X60 bit starts of UN           Explain injust (10 km and Ho 17)         X210-X60 bit starts of UN         Y200-X60 bit starts of UN           Explain injust (10 km and Ho 17)         Y20-X60 bit starts of UN         Y200-X60 bit starts of UN           Explain injust (10 km and Ho 17)         Y20-X60		CD20 : 2.5 W	XD26-XB26 with soli	d state outputs : 5 W
<table-container>ControlControlControlPresence and controlYesYesDiple function (I to X and Yes X and Yes</table-container>		XD26-XB26 : 3 W	CB20-CD20 with rela	ay outputs - XD26 with relay outputs : 6 W
Protection planet of planet planet (Pice Pice Pice Pice Pice Pice Pice Pice		XD26-XB26 with extension : 5 W	XD10-XB10 with exte	ension : 8 W
Diple sign (1) to X hole (-1) 3 3/-0.0 (-1) 3/-0.0 (-1)SUND (-1) 3/-0.0 (-1)Inderson3.9.m.% (1) 4/4 D/O.2.4.VD.(-2) 3/-0.0 (-1)Inderson3.9.m.% (1) 4/4 D/O.2.4.VD.(-2)Inderson5.9.m.% (1) 4/4 D/O.3.1.6.VD.(-2)Inderson5.9.m.% (1) 4/4 D/O.3.1.6.VD.(-2)Inderson5.9.M.% (1) 4/4 D/O.3.1.6.VD.(-2)Inderson5.9.M.% (1) 4/4 D/O.3.1.6.VD.(-2)Inderson Mark (1) 4/4 D/O.5.9.M.% (1) 4/4 D/O.3.1.6.VD.(-2)Inderson Mark (1) 4/4 D/O.5.9.M.% (1) 4/4 D/O.3.1.6.VD.(-2)Inderson Mark (1) 4/4 D/O.5.9.M.% (1) 4/4 D/O.5.9.M.% (1) 4/4 D/O.Inderson Mark (1) 4/4 D/O.5.9.M.% (1) 4/4 D/O.5.9.M.% (1) 4/4 D/O.Inderson Mark (1) 4/4 D/O.5.9.M.% (1) 4/4 D/O.5.9.M.% (1) 4/4 D/O.Inderson Mark (1) 4/4 D/O.5.9.M.% (1) 4/4 D/O.5.9.M.% (1) 4/4 D/O.Inderson Mark (1) 4/4 D/O.5.9.M.% (1) 4/4 D/O.5.9.M.% (1) 4/4 D/O.Inderson Mark (1) 4/4 D/O.5.9.M.% (1) 4/4 D/O.5.9.M.% (1) 4/4 D/O.Inderson Mark (1) 4/4 D/O.5.9.M.% (1) 4/4 D/O.5.9.M.% (1) 4/4 D/O.Inderson Mark (1) 4/4 D/O.6.9.M.% (1) 4/4 D/O.5.9.M.% (1) 4/4 D/O.Inderson Mark (1) 4/4 D/O.6.9.M.% (1) 4/4 D/O.5.9.M.% (1) 4/4 D/O.Inderson Mark (1) 4/4 D/O.6.9.M.% (1) 4/4 D/O.5.9.M.% (1) 4/4 D/O.Inderson Mark (1) 4/4 D/O.6.9.M.% (1) 4/4 D/O.5.9.M.% (1) 4/4 D/O.Inderson Mark (1) 4/4 D/O.6.9.M.% (1) 4/4 D/O.5.9.M.% (1) 4/4 D/O.Inderson Mark (1) 4/4 D/O.6.9.M.%		XD26 with solid state outputs : 2.5 W	XD26-XB26 with exte	ension : 10 W
Times Analyse         12 V DC (-13 S/+ 20 W)         24 V DC (20 W), -43 W)           Incid Larger         33 mA 8 154 V DC         33 mA 8 152 V DC           Incid Larger         33 mA 8 152 V DC         33 mA 8 152 V DC           Incid Larger         33 mA 8 152 V DC         33 mA 8 152 V DC           Incide Larger         33 mA 100 C         45 W DC           Incide Larger         34 V DC         35 mA 8 12 V DC           Incide Larger         34 V DC         35 mA           Incide Larger         34 V DC         34 MD           Incide Larger         34 MD         34 MD           Incide Larger         34 MD         34 MD           Incid Larger         776 mA         32 mA<	Protection against polarity inversions	Yes	Yes	
Times Analyse         12 V DC (-13 S/+ 20 W)         24 V DC (20 W), -43 W)           Incid Larger         33 mA 8 154 V DC         33 mA 8 152 V DC           Incid Larger         33 mA 8 152 V DC         33 mA 8 152 V DC           Incid Larger         33 mA 8 152 V DC         33 mA 8 152 V DC           Incide Larger         33 mA 100 C         45 W DC           Incide Larger         34 V DC         35 mA 8 12 V DC           Incide Larger         34 V DC         35 mA           Incide Larger         34 V DC         34 MD           Incide Larger         34 MD         34 MD           Incide Larger         34 MD         34 MD           Incid Larger         776 mA         32 mA<	Disitel issues (14 to 14 and 11 to 10)			
Input numei         4 mA 8 12.0 VD         2.6 mA 8 12.0 VD           Add NA 8 12.0 VDC         3.2 mA 8 24.0 VDC         3.2 mA 8 24.0 VDC           Logic Location Description         5.7 Ma 0         7.4 Ma 0           Logic Location Description         5.7 Ma 0         7.4 Ma 0           Logic Location Description         5.7 Ma 0         7.4 Ma 0           Logic Location Description         5.7 Ma 0         7.4 Ma 0           Description Description         5.7 Ma 0         7.4 Ma 0           Description D				
4.4 mA § 12.0 VDC3.2 mA § 3.4 VDCIncut inpositions6.3 mA § 8.4 VDCIncut inpositions27.427.440Uncut inpositions6.9 VDC7.440Maining interplat27.042.2 mASolid C vatebage interplat2.2 mA2.2 mASolid C vatebage interplations2.7 mA2.7 mASolid C vatebage interplations12 cycle interplations12 cycle interplationsSolid C vatebage interplations1.1 maccontinues with cycle interplations12 cycle interplationsSolid C vatebage interplationsContact or 3-well PAPContact or 3-well PAPSolid C vatebage interplationsContact or 3-well PAPContact or 3-well PAPSolid C vatebage interplationsNoneNoneNoneSolid C vatebage interplationsContact or 3-well PAPNoneNoneSolid C vatebage interplationsNoneNoneNoneSolid C				
Inder theresS AN & If A V DCS AN & If A V DCLingt Instange method3 7 V DC3 5 V DCLingt S Using Instant 02 2 An A3 5 V DCLingt C V DC3 5 V DC3 5 V DCLingt C V DC3 5 V DC3 5 V DCLingt C V DC3 5 V DC3 5 V DCLingt C V DC3 5 V DC3 5 V DCLingt C V Dingt S B 2 1 Lingt C V Lingt S B 2 1 Lingt S D 2 1 Lingt S B 2 1 Lingt S D 2 1 Lingt S B 2 1 Lingt S D 2 1 L	Input current			
inclusion27.N27.4 N2Copic traceger breader27.N422.mACopic traceger breader22.mA22.mACopic traceger breader23.mA22.mACopic traceger breader12 cycle times-0.75 mARelates a control traje tase 0-0.9 mA-0.75 mARelates a control traje tase 0-0.9 mA-0.75 mAMainton control treaderImputs 18.8 ListA eff (K Hz) & FBD (top to 5 K Hz)Imputs 18.0 ListA eff (K Hz) & FBD (top to 5 k Hz)Imputs 18.0 ListA eff (K Hz) & FBD (top to 5 k Hz)Imputs 18.0 ListA eff (K Hz) & FBD (top to 5 k Hz)Imputs 18.0 ListA Hz (K Hz)Control typeControl type 18.CCA (Hz) (L Z T0) + T0Control type 18.CCA (Hz) (L Z T0) + T0Imput 18.CCA (Hz) (L Z T0) + T0Control typeControl type 18.CCA (Hz) (L Z T0) + T0Control type 18.CCA (Hz) (L Z T0) + T0Imput 18.CCA (Hz) (L Z T0) + T0Control typeControl type 18.CCA (Hz) (L Z T0) + T0Control type 18.CCA (Hz) (L Z T0) + T0Imput 18.CCA (Hz) (L Z T0) + T0Control type 18.CCA (Hz) (Hz)Type 1Control type 18.CCA (Hz) (Hz) (Hz) (Hz) (Hz) (Hz) (Hz) (Hz)				
Space for Advancement of Advancemen		5.3 mA @ 14.4 VDC		4.0 mA @ 30.0 VDC
Making conversion in programment along state 02 2 mARelease conversion al loops state 0< 00 mA	Input impedance	2.7 kΩ		7.4 kΩ
Ling & Oxing = International\$ \$ V DC\$ 5 V DCRingener uniter all systeme D9 P nA\$ 5 V DCRingeners inter all systeme D1 - 2 cycle times1 - 2 cycle timesRingeners inter all systeme D1 - 2 cycle times1 - 2 cycle timesMaxmum counters frequencyInputs 18 A List all K(1) K FB D (up to 6 K H2)Inputs 18 A List all K(1) K FB D (up to 6 K H2)Nameum counters frequencyContact of X wave PAPContact of X wave PAPSense typeContact of X wave PAPContact of X wave PAPSense typeContact of X wave PAPContact of X wave PAPSense typeContact of X wave PAPContact of X wave PAPSense typeContact of X wave PAPContact of X wave PAPSense typeNoneNoneNoneNoneNoneNone tables in futureNoneNoneSense tables through M wave interNoneNoneSense tables through M wave interNoneNoneSense tables tables through M wave interHapets B - 16Sense tables tablesSense tables tables tables tablesHapets B - 16Sense tablesSense tables tables tablesHapets B - 16Sense tablesSense tables tables tables tables tables1 Nameuta tables tablesSense tables tables tables tables tables tables tables1 Nameuta tables tablesSense tables t	Logic 1 voltage threshold	≥7VDC		≥ 15 V DC
Ling & Oxing = International\$ \$ V DC\$ 5 V DCRingener uniter all systeme D9 P nA\$ 5 V DCRingeners inter all systeme D1 - 2 cycle times1 - 2 cycle timesRingeners inter all systeme D1 - 2 cycle times1 - 2 cycle timesMaxmum counters frequencyInputs 18 A List all K(1) K FB D (up to 6 K H2)Inputs 18 A List all K(1) K FB D (up to 6 K H2)Nameum counters frequencyContact of X wave PAPContact of X wave PAPSense typeContact of X wave PAPContact of X wave PAPSense typeContact of X wave PAPContact of X wave PAPSense typeContact of X wave PAPContact of X wave PAPSense typeContact of X wave PAPContact of X wave PAPSense typeNoneNoneNoneNoneNoneNone tables in futureNoneNoneSense tables through M wave interNoneNoneSense tables through M wave interNoneNoneSense tables tables through M wave interHapets B - 16Sense tables tablesSense tables tables tables tablesHapets B - 16Sense tablesSense tables tables tablesHapets B - 16Sense tablesSense tables tables tables tables tables1 Nameuta tables tablesSense tables tables tables tables tables tables tables1 Nameuta tables tablesSense tables t	Making current at logic state 1	≥ 2 mA		≥ 2.2 mA
Enclose control Enclose c				
Response me         12 cycle limes         12 cycle limes           Maximum counting linguency         Inputs IS 42 : Las de Ste Hall A linguis IS 42 is Las de Ste Hall Inputs IS 44 VD C nax.           Cas de Ste Hall Inputs IS 44 VD C nax.         Cas de Ste Hall VD C nax.         Cas de Ste Hall VD C nax.           Value of LSS 100 is Value Inputs Input				
Maxmonumery impose in a 2: Ladder (1 kHz) A FBD (are to 8 kHz) impose inter (1) : 11 (2: art of 10 mathematication of 10 mathmati				
npinet S0 14 & He M': In accordance with cycle time [C) and input response time [C) and RD input response time [C] and RD input response time [				
cpict response time (T) : 11 (2 x T0 + T)input response time (T) : 11 (2 x T0 + T)Contact or 3-wire NPContact or 3-wire NPContact or 3-wire NPContact or 3-wire NPContact or 3-wire NPSectionContact or 3-wire NPRestriveContact or 3-wire NPNoneContact or 3-wire NPSectionContact or 3-wire NPSecti	Maximum counting frequency			
Senser typeContact or 3-wire PNPContact or 3-wire PNPConterning to ECAPING EN131-22Type 1Final HypeResistiveExistion between power supply and puistsNoneSocial Detween power supply and puistsNoneExistion between power supply and puistsNoneProtection against polarity investionsYesCharlow Control CD and XDNoneAnalogue or diplicationst (Bto 1G)4 inputs 18 -rifeCharlow Control CD and XD4 inputs 18 -rifeCharlow Control CD and XD6 inputs 18 -rifeCharlow Control CD and XD12 klaCharlow Control CD and XD12 klaCharlow Control CD and XD12 klaCharlow Control CD and XD12 klaInput streatment angle(0 -rifl V) or (0 -rV power supply)Upplu Integration14 kloUpplu Integration12 klaUpplu Integration14 kloUpplu Integration12 klaUpplu Integration10 bits at max. input voltageConversion InnoController cycle InneConversion InnoController cycle Inn			• • • •	
Contention to TEPEN 0119-12Type 1Control to Tower supply and rougsNoneExolation to Tower supply and rougsNoneExolation to Tower supply and rougsNoneNoneNoneControl to Tower supply and rougsNoneProtection gamba polarity inversionsYesSalus indicatorOn LCD screen for CD and XDAnalogue or digital inputs (B to IG)Inputs IB -IECalibor differenceInputs IB -IEInput subscripter differenceInputs IB -IECalibor differenceInputs IB -IEInput subscripter differenceInput subscripte				
Inst. ppResidueResidueResidueInst. Source for CD and yDDNoneNoneExistion bothween equatsNoneNoneExistion bothween equatsNoneNoneSource for CD and XDVesNoneSource for CD and XDNoneNoneAnalogue of digital inputs (Bto 16)Imputs IBIEImputs IBIESource for CD and XDImputs IBIEImputs IBIESource for CD and XDImputs IBIEImputs IBIESource for CD and XD of IDV power supplyImputs IBIEMassamet range(Imputs Ves Common Mode1/200Imput successImput NoteImput NoteMassamet range(Imput Note1/200Massamet range(Imput NoteNoteNational SourcessImput NoteSourcessNational SourcessImput NoteCommon modeResolutionImput NoteCommon modeResolutionImput NoteSourcessResolutionImput NoteSourcessResolutionImput NoteSourcessResolutionImput NoteImput NoteController cycle infleImput NoteImput NoteResolutionImput NoteImput NoteResolution Extreme antigout Half NoteImput NoteResolutio		Contact or 3-wire PNP		Contact or 3-wire PNP
Isolation between power supply and inputsNoneNoneSolation between prototNoneNoneProtection against polarly inversionsOn LCD screen for CD and XDOn LCD screen for CD and XDSolation advancesOn LCD screen for CD and XDOn LCD screen for CD and XDAslaggio or digital inputs (Bo 16)imputs IB—IEimputs IB—IECB12-CD12-XX10-XX10imputs IB—IEimputs IB—IECB12-CD12-XX10-XX10imputs IB—IEimput IB—IECB12-CD12-XX10-XX10imput IB—IEimput IB—IECB12-CD12-XX10-XX10imput IB—IEimput IB—IECB12-CD12-XX10-XX10imput IB—IEimput IB—IECB12-CD12-XX10-XX10imput IB=IEimput IB=IEImput Ingeding(D -10 V) or (D -V power supply)imput IB=IEImput Ingedingimput IDimput IDImput Ingedingimput IDimput IDIm	Conforming to IEC/EN 61131-2	Type 1		Type 1
Isolation between power supply and inputsNoneNoneSolation between prototNoneNoneProtection against polarly inversionsOn LCD screen for CD and XDOn LCD screen for CD and XDSolation advancesOn LCD screen for CD and XDOn LCD screen for CD and XDAslaggio or digital inputs (Bo 16)imputs IB—IEimputs IB—IECB12-CD12-XX10-XX10imputs IB—IEimputs IB—IECB12-CD12-XX10-XX10imputs IB—IEimput IB—IECB12-CD12-XX10-XX10imput IB—IEimput IB—IECB12-CD12-XX10-XX10imput IB—IEimput IB—IECB12-CD12-XX10-XX10imput IB—IEimput IB—IECB12-CD12-XX10-XX10imput IB=IEimput IB=IEImput Ingeding(D -10 V) or (D -V power supply)imput IB=IEImput Ingedingimput IDimput IDImput Ingedingimput IDimput IDIm	Input type	Resistive		Resistive
Isolator publicationNoneNoneProtection agning polarity inversionYesOn LCD screen for CD and XDAnalousFinal Screen for CD and XDOn LCD screen for CD and XDAnalous or digital inputs (B to IC)I pouls BICI pouls BICCB2X-CD2X-XX50XI pouls I pouls BICI pouls BICCB2X-CD2X-XX50XI pouls BICI pouls BICCB	Isolation between power supply and inputs	None		None
Protection agained polarity inversionsYesYesStatus indicatorOn LCD screen for CD and XDOn LCD screen for CD and XDAnalogue or digital inputs (IB to IG)I input IB —IEI input IB —IECRIZ-2012-X010-X010I input IB —IEI input IB —IECRIZ-2012-X010-X010I input IB —IEI input IB —IECRIZ-2012-X010-X010I input IB —IEInput IB —IEInput scada sanalogue InputsII input IDInput scada sanalogue InputsI input IDI input IDInput scada sanalogue InputsI input IDI input IDInput scada sanalogue InputsI input IDI input IDInput modifiedI input IDI input IDI input IDInput modifiedI input IDI input IDI input IDInput modifiedI input IDI input IDI input IDInput IDInput IDI input IDI input IDInput IDI input IDI input IDI input IDInp				
Statis indicator         On. LCD screen for CD and XD         On. LCD screen for CD and XD           Analogue or digital inputs (B to IG)         4 inputs IB -iE         4 inputs IB -iE           GE30: C012-X010(X-S10)         4 inputs IB -iE         6 inputs IB -iE           GE30: C012-X010(X-S10)         4 inputs IB -iE         6 inputs IB -iE           Input sueds as analogue inputs         (0 -i10 V) or (0 -V power supply)         (0 -i10 V) or (0 -V power supply)           Input sueds as analogue inputs         (0 -i10 V) or (0 -V power supply)         (0 -i10 V) or (0 -V power supply)           Input sueds as analogue inputs         (0 -i10 V) or (0 -V power supply)         (0 -i10 V) or (0 -V power supply)           Input sueds as analogue inputs         (0 -i10 V) or (0 -V power supply)         (0 -i10 V) or (0 -V power supply)           Input sueds as analogue inputs         (0 -i10 V) or (0 -V power supply)         (0 -i10 V) or (0 -V power supply)           Value of LSB         (1 -i10 V) or (0 -V power supply)         (0 -i10 V) or (0 -V power supply)           Value of LSB         (1 -i10 V) or (0 -V power supply)         (0 -i10 V) or (0 -V power supply)           Value of LSB         (1 -i10 V) or (0 -V power supply)         (0 -i10 V) or (0 -V power supply)           Value of LSB         (-i10 V) or (0 -V power supply)         (0 -i10 V) como node           Convono node         Common node				
Analogue or digital inputs (B to IG)GB12-c015-x010-x8104 inputs IB-IIGGB12-c015-x010-x8106 inputs IB-IIGInput suced as analogue inputs6 inputs IB-IIGInput suced as analogue inputs( $0 -10$ V) or ( $0 -V$ power supply)Input suced as analogue inputs( $0 -10$ V) or ( $0 -V$ power supply)Input suced as analogue inputs( $0 -10$ V) or ( $0 -V$ power supply)Input suced as analogue inputs( $0 -10$ V) or ( $0 -V$ power supply)Input suced as analogue inputs( $0 -10$ V) or ( $0 -V$ power supply)Input suced as analogue inputs( $0 -10$ V) or ( $0 -V$ power supply)Input suced as analogue inputs( $0 -10$ V) or ( $0 -V$ power supply)Input suced as analogue inputs( $0 -10$ V) or ( $0 -V$ power supply)Input suced as analogue inputs( $0 -10$ V) or ( $0 -V$ power supply)Input suced as analogue inputs( $0 -10$ V) or ( $0 -V$ power supply)Input suced as analogue inputs( $0 +10$ V) or ( $0 -V$ power supply)Input suced as analogue input suce as input				
CB12-C012-X010-X810         4 inputs BIE           CB20-C020-X626-X026         6 inputs IBIE           Inputs used as analogue inputs         6 inputs IBIE           Input susced as analogue inputs         (010 V) or (0V power supply)           Measurement range         (010 V) or (0V power supply)           Input substage         14 kU VC max.           Input substage         14 kU VC max.           Value of LSB         0 W X- mA           Input substage         14 kV VA mA           Input substage         14 kV VA mA           Conversion Ime         Controller cycle ime           Controller cycle ime         Controller cycle ime           Controller cycle ime         5 %           Repeat accuracy at 55 °C         ± 5 %           Controller cycle ime         None           Califor between analogue channel and power supply         None           Califor between analogue channel and power s	Status indicator	On LCD screen for CD and XD		On LCD screen for CD and XD
CB12-C012-X010-X810         4 inputs BIE           CB20-C020-X626-X026         6 inputs IBIE           Inputs used as analogue inputs         6 inputs IBIE           Input susced as analogue inputs         (010 V) or (0V power supply)           Measurement range         (010 V) or (0V power supply)           Input substage         14 kU VC max.           Input substage         14 kU VC max.           Value of LSB         0 W X- mA           Input substage         14 kV VA mA           Input substage         14 kV VA mA           Conversion Ime         Controller cycle ime           Controller cycle ime         Controller cycle ime           Controller cycle ime         5 %           Repeat accuracy at 55 °C         ± 5 %           Controller cycle ime         None           Califor between analogue channel and power supply         None           Califor between analogue channel and power s	Analogue or digital inputs (IB to IG)			
CB20-CD20-XB26-XD26         6 inputs IBIG         6 inputs IBIG           Inputs used as analogue inputs         (010 V) or (0V power supply)         (010 V) or (0V power supply)           Input sused as analogue inputs         (010 V) or (0V power supply)         (010 V) or (0V power supply)           Input sused as analogue inputs         14 kD Cornax.         12 kD           Input supply         14 kD Cornax.         29 mV, 4 mA           Value of LSB         14 mV, 4 mA         29 mV, 4 mA           Conversion time         Controller cycle time         Controller cycle time           Conversion time         Controller cycle time         Controller cycle time           Accuracy zl 55 °C         452 %         55           Accuracy zl 55 °C         52 %         54           Accuracy zl 55 °C         52 %         54           Solation Detween analogue channel and power supply         None         None           Cable length         10 m maximum, with shielded cable (sensor not isolated)         10 m maximum, with shielded cable (sensor not isolated)           Solation Detween analogue channel and power supply         None         None         None           Input sused as digital inputs         Yes Commonneded)         10 m maximum, with shielded cable (sensor not isolated)         10 m maximum, with shielded cable (sen		4 inputs IB →IE		4 inputs IB →IF
Inputs used as analogue inputsInputs used as analogue inputsMeasurment range $(0 -10 V) \circ (0 - V power supply)$ $(0 -10 V) \circ (0 - V power supply)$ Measurment range $(0 -10 V) \circ (0 - V power supply)$ $(0 -10 V) \circ (0 - V power supply)$ Input inputs mode14 k $\Delta$ 30 V DC maxValue of LSB14 mV, 4 mA30 V DC maxResolution10 bits at max, input voltageCommon modeConversion timeController cycle timeController cycle timeAccuracy at 25 °C45 %45 %Accuracy at 25 °C45 %45 %Accuracy at 25 °C45 %45 %Accuracy at 25 °C45 %2 %Isolation between analogue channel and power supplyNoneNoneSolation between analogue channel and power supplyNoneNoneProtochon against polarity inversionsYesYesProtochon against polarity inversionsYesYesProtochon against polarity inversionsYesYesProtochon against polarity inversionsYes24 V DC (20 % / 425 %)Input subge10 m aximum, with shielded cable (sensor not isolated)10 km ax.Input current0 mak i 12 v DC1 mA (ii 12 v DCInput subge threshold27 V DC (13 % / 420 %)24 V DC (20 % / 425 %)Input impedance12 v DC (13 % / 420 %)12 k DLogic to valge threshold27 V DC1 fam A (ii 12 v DCInput impedance10 m A % ii 12 v DC1 fam A (ii 12 v DCLogic to valge threshold27 V DC2 fam A (ii 12 v DC<				•
Instrument range         (010 V) or (0V power supply)         (010 V) or (0V power supply)           Input impedance         14 kU DC max.         30 V DC max.           Value of LSB         14 mV, 4 mA         29 mV, 4 mA           Iput type         Common mode         Common mode           Resolution         10 bits at max. input voltage         10 bits at max. input voltage           Conversion fme         Controller cycle time         5 %           Accuracy at 25 °C         ± 5 %         ± 5 %           Accuracy at 25 °C         ± 2 %         ± 2 %           Accuracy at 55 °C         ± 2 %         ± 2 %           Repeat accuracy at 55 °C         ± 2 %         Yes           Isolation between analogue channel and power supply         None         None           Cable length         10 m maximum, with shielded cable (sensor not isolated)         10 m maximum, with shielded cable (sensor not isolated)           Protection against polarity inversions         Yes         Yes         Yes           Input sueed as digital inputs         10 V C (13 % / + 20 %)         24 VDC (20 % / + 25 %)           Input uneed and digital inputs         0 T m A % 104 V DC         2 m A % 24 VDC           Input sueed as digital inputs         0 T m A % 104 V DC         2 m A % 30 V DC           Inpu	CB20-CD20-XB26-XD26	6 inputs IB →IG		$\circ$ inputs is $\rightarrow$ iG
Input modage         14 kD         12 kD           input voltage         14 kV DC max.         30 V DC max.           value of LSB         14 mV, 4 mA         29 mV, 4 mA           Input type         Common mode         Common mode           Resultion         10 bits at max. input voltage         10 bits at max. input voltage           Concorsion time         Controller cycle time         Controller cycle time           Accuracy at 25 °C         ± 5 %         ± 5 %           Accuracy at 55 °C         ± 2 %         ± 2 %           Repeat accuracy at 55 °C         ± 2 %         ± 2 %           Repeat accuracy at 55 °C         ± 2 %         ± 2 %           Repeat accuracy at 55 °C         ± 2 %         ± 2 %           Repeat accuracy at 55 °C         ± 2 %         ± 2 %           Repeat accuracy at 55 °C         ± 2 %         ± 2 %           Repeat accuracy at 55 °C         ± 2 %         ± 2 %           Repeat accuracy at 55 °C         ± 2 %         ± 2 %           Repeat accuracy at 55 °C         ± 2 %         ± 2 %           Repeat accuracy at 56 °C         ± 2 %         10 m maximum, with shielded cable (sensor not isolated)           10 m maximum, with shielded cable (sensor not isolated)         10 m maximum, with shielded cable (sensor not iso	Inputs used as analogue inputs			
Input modage         14 kD         12 kD           input voltage         14 kV DC max.         30 V DC max.           value of LSB         14 mV, 4 mA         29 mV, 4 mA           Input type         Common mode         Common mode           Resultion         10 bits at max. input voltage         10 bits at max. input voltage           Concorsion time         Controller cycle time         Controller cycle time           Accuracy at 25 °C         ± 5 %         ± 5 %           Accuracy at 55 °C         ± 2 %         ± 2 %           Repeat accuracy at 55 °C         ± 2 %         ± 2 %           Repeat accuracy at 55 °C         ± 2 %         ± 2 %           Repeat accuracy at 55 °C         ± 2 %         ± 2 %           Repeat accuracy at 55 °C         ± 2 %         ± 2 %           Repeat accuracy at 55 °C         ± 2 %         ± 2 %           Repeat accuracy at 55 °C         ± 2 %         ± 2 %           Repeat accuracy at 55 °C         ± 2 %         ± 2 %           Repeat accuracy at 55 °C         ± 2 %         ± 2 %           Repeat accuracy at 56 °C         ± 2 %         10 m maximum, with shielded cable (sensor not isolated)           10 m maximum, with shielded cable (sensor not isolated)         10 m maximum, with shielded cable (sensor not iso	Measurement range	$(0 \rightarrow 10 \text{ V}) \text{ or } (0 \rightarrow \text{V power supply})$		$(0 \rightarrow 10 \text{ V}) \text{ or } (0 \rightarrow \text{V power supply})$
Input vortage14.4 V DC max.30 V DC max.Value of LSB14 mV, 4 mA29 mV, 4 mAUnput typeCommon modeCommon modeResultion10 bits at max, input votage0 bits at max, input votageConversion timeController cycle timeController cycle timeAccuracy at 25 °C± 5%± 5%Accuracy at 25 °C± 62 %± 2%Repeat accuracy at 25 °C± 2%± 2%Isolation between analogue channel and power supplyNoneNoneCable length10 m maximum, with shielded cable (sensor not isolated)10 m maximum, with shielded cable (sensor not isolated)Potection against polarity inversionsYesYesPotection against polarity inversionsYesYesInput sused as digital inputs16 kD max.Input votage12 V DC (+13% /+20 %)24 VDC (-20 % /+25 %)Input sused as digital inputs12 V DC (+13% /+20 %)20 mA @ 24 0 V DCInput votage14 kU25 mA @ 30.0 VDCInput votage14 kU25 mA @ 30.0 VDCInput inpedance14 kU12 kDInput inpedance14 kU25 mA @ 30.0 VDCInput inpedance14 kQ55 V DCResponse time1-2 cycle timesInput inpedance1-2 cyc	*			
Value of LSB         14 mV, 4 mA         29 mV, 4 mA           input type         Common mode         Common mode         Common mode           Resolution         10 bits at max. input voltage         10 bits at max. input voltage         Controller cycle time           Conversion time         Controller cycle time         Controller cycle time         Controller cycle time           Accuracy at 55 °C         ± 5 %         ± 6 2 %         ± 2 %           Repeat accuracy at 55 °C         ± 6 2 %         ± 2 %           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           Protection against polarity inversions         Yes         Yes           Input voltage         12 V DC (13 % / +20 %)         24 V DC (20 % / +25 %)           Input current         07 m A @ 10.4 VDC         2.6 M @ 2.0 V DC           Input inpedance         14 MQ         14 KQ           Logic timeshold         ≥ 3 V DC         2.0 mA @ 10.0 VDC           Logic timeshold         ≥ 3 V DC         2.1 PMA           Logic timeshold         ≥ 3 V DC         50 SmA           Logic timeshold         ≤ 3 V DC         50 SmA           Log				
Input typeCommon modeCommon modeResolution10 bits at max. input voltage10 bits at max. input voltageConversion timeController cycle timeController cycle timeAccuracy at 25 °C±5 %±5 %Accuracy at 55 °C±0 %±0 %Repeat accuracy at 55 °C±0 %±0 %Isolation between analogue channel and power supplyNoneNoneIsolation between analogue channel and power supplyNoneNoneCable length10 m maximum, with shielded cable (sensor not isolated)10 maximum, with shielded cable (sensor not isolated)Protection against polarity inversionsYesYesPotentiometer control22 kQ/0.5 W (recommended)22 kQ/0.5 W (recommended)None2.2 kQ/0.5 W (recommended)10 maximum, with shielded cable (sensor not isolated)Input sused as digital inputs12 V D C (13 % / 420 %)24 V D C (20 % / 425 %)Input used as digital inputs12 V D C (13 % / 420 %)24 V D C (20 % / 425 %)Input used as digital inputs10 max (14 xVDC2.6 mA @ 31.0 V DC10 m A@ 11.4 VDC16 mA @ 13.2 V DC2.0 mA @ 31.0 V DC10 upt used as tal 10 as tat 12.0 5 mA2.1 2 mALogic Voltage threshold5.0 FA2.1 2 mALogic Voltage threshold5.0 5 mA2.1 2 mALogic Voltage threshold5.0 5 mA5.0 5 mAResponse time12 cycle times12 cycle timesResponse time12 cycle times12 cycle timesMaximum counting frequency1 naccordan				
Resolution     10 bits at max. input voltage     10 bits at max. input voltage       Conversion time     Controller cycle time     Controller cycle time       Accuracy at 25 °C     ± 5 %     ± 6 2 %       Accuracy at 25 °C     ± 6 2 %     ± 6 2 %       Repeat accuracy at 55 °C     ± 6 2 %     ± 2 %       Isolation Everyen analogue channel and power supply     None     None       Cable length     10 m maximum, with shielded cable (sensor not isolated)     10 m maximum, with shielded cable (sensor not isolated)       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       Protection against polarity inversions     Yes     Yes       Protection against polarity inversions     Yes     Yes       Input sused as digital inputs     12 V DC (-13 % / +20 %)     24 V DC (-20 % / +25 %)       Input current     0.7 m A © 10.44 VDC     2.0 m A @ 24.0 VDC       10 m A @ 14.4VDC     2.0 m A @ 24.0 VDC     2.0 m A @ 24.0 VDC       10 put sused as digital pinuts     1.0 m A @ 14.4VDC     2.0 m A @ 24.0 VDC       10 cycle threshold     5.7 V DC     5.6 S N DC       Release current at logic state 1     2.0 5 m A     5.0 5 m A       Release curent at logic state 1     3.0 2 m A     5.0 5 m				
Conversion timeController cycle timeController cycle timeAccuracy at 25 °C $\pm 5 \%$ $\pm 5 \%$ Accuracy at 25 °C $\pm 62 \%$ $\pm 2 \%$ Repeat accuracy at 25 °C $\pm 2 \%$ $\pm 2 \%$ Isolation between analogue channel and power supplyNoneNoneProtection against polarity inversionsYesYesPotentiometer control10 m maximum, with shielded cable (sensor not isolated)10 m maximum, with shielded cable (sensor not isolated)Protection against polarity inversionsYesYesPotentiometer control22 k0/0.5 W (recommended)10 kQ max.Input voltage12 V DC (-13 % /+20 %)24 V DC (-20 % /+25 %)Input voltage12 V DC (-13 % /+20 %)2.0 mA @ 2.4 V DCInput voltage12 V DC (-13 % /+20 %)2.0 mA @ 2.4 V DCInput voltage12 V DC (-13 % /+20 %)2.0 mA @ 2.4 V DCInput voltage12 V DC (-13 % /+20 %)2.0 mA @ 2.4 V DCInput impedance14 kDC2.0 mA @ 2.4 V DCLogic 1 voltage threshold $\approx 7 V DC$ $\approx 5 V DC$ Response time1 -2 cycle times1 -2 cycle timesInaccordance with cycle time (Tc) and input response time (Tr) : I naccordance with cycle time (Tc) and input response time (Tr) : I naccordance with cycle time (Tc) and input response time (Tr) : I naccordance with cycle time (Tc) and input response time (Tr) : I naccordance with cycle time (Tc) and input response time (Tr) : I naccordance with cycle time (Tc) and input response time (Tr) : I naccordance with cycle time (Tc) and input response time (Tr) : I naccordance with cycle time (Tc) and inpu				
Accuracy at 25 °C       ± 5 %       ± 5 %         Accuracy at 55 °C       ± 6.2 %       ± 6.2 %         Accuracy at 55 °C       ± 2 %       ± 2 %         Isolation between analogue channel and power supply       None       None         Cable length       10 m maximum, with shielded cable (sensor not isolated)       10 m maximum, with shielded cable (sensor not isolated)         Protection against polarity inversions       Yes       Yes         Potentiometer control       22 k0/0.5 W (recommended)       22 k0/0.5 W (recommended)         Input sueed as digital inputs       22 k0/0.5 W (recommended)       10 km max.         Input current       0.7 m & 0 10.44 VDC       16 m & 0 12.2 VDC         0.7 m & 0 10.44 VDC       16 m & 0 12.2 VDC       10 m & 0 14.2 VDC         10 m & 0 14.4VDC       25 m & 0 30.0 VDC       10 m & 0 14.4 VDC         10 m & 0 14.4VDC       25 m & 0 30.0 VDC       10 m & 0 14.4 VDC         10 m & 0 14.4VDC       25 m & 0 30.0 VDC       10 m & 0 14.4 VDC         10 m & 0 14.4VDC       25 m & 0 30.0 VDC       10 m & 0 14.4 VDC         10 goit ovoltage threshold       ≤ 3 V DC       ≤ 5 V DC         Response time       1 → 2 cycle times       1 → 2 cycle times         1 maccordance with cycle time (Tc) and input response time (Tr)       1 naccordance with cycle ti	Resolution	10 bits at max. input voltage		10 bits at max. input voltage
Accuracy at 55 °C         ± 62 %         ± 62 %           Repeat accuracy at 55 °C         ± 2 %         ± 2 %           Isolation between analogue channel and power supply         None         None           Cable length         10 m maximum, with shielded cable (sensor not isolated)         10 m maximum, with shielded cable (sensor not isolated)           Protection against polarity inversions         Yes         Yes           Potentiometer control         2.2 kC/0.5 W (recommended)         10 kC max.           Inputs used as digital inputs         """"""""""""""""""""""""""""""""""""	Conversion time	Controller cycle time		Controller cycle time
Accuracy at 55 °C         ± 62 %         ± 62 %           Repeat accuracy at 55 °C         ± 2 %         ± 2 %           Solation between analogue channel and power supply         None         None           Cable length         10 m maximum, with shielded cable (sensor not isolated)         10 m maximum, with shielded cable (sensor not isolated)           Protection against polarity inversions         Yes         Yes           Potentiometer control         22 k0/0.5 W (recommended)         10 k0 max.           Inputs used as digital inputs         22 k0/0.5 W (recommended)         10 k0 max.           Input suga as 10 k0 max.         24 VD C (20 % / +25 %)         10 k0 max.           Input suga as 10 k1 k0 max.         24 VD C (20 % / +25 %)         10 k0 max.           Input suga as 10 k1 k0 max.         24 VD C (20 % / +25 %)         10 k0 max.           Input suga as 10 k1 k0 max.         24 VD C (20 % / +25 %)         26 ma @ 24.0 VD C           Input impedance         14 k0         12 k0         25 mA @ 30.0 VD C           Input impedance         14 k0         12 k0         25 VD C           Respone time         30 XD C         55 VD C         50 mA           Respone time at logic state 0         50 2 mA         50 2 mA         50 5 mA           Respone time         12 cycle times	Accuracy at 25 °C	±5%		±5%
Repeat accuracy at 55 °C         ± 2 %           Isolation between analogue channel and power supply         None         None           Isolation between analogue channel and power supply         None         None           Cable length         10 m maximum, with shielded cable (sensor not isolated)         10 m maximum, with shielded cable (sensor not isolated)           Protection against polarity inversions         Yes         Yes           Potentioneter control         2.2 k0/0.5 W (recommended) 10 k0 max.         2.2 k0/0.5 W (recommended) 10 k0 max.           Input sused as digital inputs         Input solage         12 V DC (13 % / 420 %)         24 V DC (-20 % / 425 %)           Input tournent         0.9 mA @ 12.0 VDC         2.0 mA @ 24.0 V DC         2.0 mA @ 24.0 V DC           Input solage threshold         2 7 V DC         2.0 mA @ 24.0 V DC         2.0 mA @ 24.0 V DC           Logic 1 voltage threshold         2 7 V DC         2.5 mA @ 3.00 VDC         2.0 mA @ 24.0 V DC           Logic 1 voltage threshold         2 7 V DC         2.5 MA @ 3.00 VDC         2.0 mA @ 24.0 V DC           Logic 1 voltage threshold         3 V DC         5.0 MA         1.2 mA           Logic 0 voltage threshold         5.0 V DC         5.0 V DC         3.0 V DC           Responee time         12 cycle times         12 cycle times         12 cycl		± 6.2 %		± 6.2 %
Isolation between analogue channel and power supply         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 kD/0.5 W (recommended) 10 kD max.         2.2 kD/0.5 W (recommended) 10 kD max.           Input sued as digital inputs         2.2 VD C (-13 % / +20 %)         2.4 VD C (-20 % / +25 %)           Input voltage         10 Tm A@ 10.44 VDC         2.0 m A@ 24.0 VDC           0.9 m A@ 12.0 VDC         2.5 m A@ 30.0 VDC           1.9 m A@ 14.4 VDC         2.5 m A@ 30.0 VDC           1.9 m A@ 14.4 VDC         2.5 m A@ 30.0 VDC           1.9 m A@ 14.4 VDC         2.5 m A@ 30.0 VDC           1.9 m A@ 14.4 VDC         2.5 m A@ 30.0 VDC           1.9 m A@ 14.4 VDC         2.5 m A@ 30.0 VDC           Logic 0 voltage threshold         3.0 VDC           Logic 0 voltage threshold         5.0 S m A           Logic 0 voltage threshold         5.0 C           Response time         12 cycle times           Response time         12 cycle times           Maximum counting frequency         1 naccordance with cycle time (Tc) and input response time (Tr)           1/((2 x Tc) + Tr)         1/((2 x Tc) + Tr)<				
Cable length10 m maximum, with shielded cable (sensor not isolated)10 m maximum, with shielded cable (sensor not isolated)Protection against polarity inversionsYesYesPotentiometer control $22 k 00.5 W$ (recommended) to kQ max. $22 k 00.5 W$ (recommended) to kQ max.Inputs used as digital inputs $10 k m max.$ $10 k Q max.$ Input voltage $12 V D C (-13 \% / +20 \%)$ $24 V D C (-20 \% / +25 \%)$ Input current $0.7 m A \oplus 10.44 V D C$ $0.9 m A \oplus 11.20 V D C1.0 m A \oplus 24.00 V D C2.0 m A $				
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) 10 kΩ max.         Inputs used as digital inputs       10 kΩ max.         Input voltage       12 V DC (-13 % / +20 %)       24 V DC (-20 % / +25 %)         Input voltage       0.7 mA @ 10.44 VDC       1.6 mA @ 19.2 VDC         0.9 mA @ 12.0 VDC       2.0 mA @ 24.0 V DC       2.0 mA @ 24.0 V DC         1.0 mA @ 14.4VDC       2.5 mA @ 30.0 VDC       1.0 mA @ 14.4VDC         Logic 1 voltage threshold       27 V DC       2.15 MA         Making current at logic state 1       2.0 S mA       2.1 C mA         Logic 0 voltage threshold       53 V DC       55 V DC         Release current at logic state 0       5.0 2.0 mA       5.0 S mA         Response time       1 →2 cycle times       1 →2 cycle times         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)         Sensor type       Contact or 3-wire PNP       Contact or 3-wire PNP         Contact or 3-wire PNP       Contact or 3-wire PNP       Contact or 3-wire PNP         Contact or 13-wire PNP       Contact or 3-wire PNP       Contact or 3-wire PNP </td <td></td> <td></td> <td>and includes 10</td> <td></td>			and includes 10	
Potentiometer control       2.2 kΩ/0.5 W (recommended) 10 kΩ max.       2.2 kΩ/0.5 W (recommended) 10 kΩ max.         Inputs used as digital inputs			not isolated)	· · · · · · · · · · · · · · · · · · ·
I 0 kΩ max.         I 0 kΩ max.           Inputs used as digital inputs         Input voltage         I 2 V DC (-13 % / +20 %)         I A C           Input voltage         12 V DC (-13 % / +20 %)         24 V DC (-20 % / +25 %)         I           Input voltage         0.7 m A @ 10.44 VDC         16 m A @ 12.2 VDC         20 m A @ 24.0 V DC           0.9 m A @ 12.0 VDC         2.0 m A @ 24.0 V DC         2.0 m A @ 24.0 V DC           1.0 m A @ 14.4 VDC         2.5 m A @ 30.0 VDC         10 m A @ 14.4 VDC           Logic 1 voltage threshold         ≥ 7 V DC         2.5 m A @ 30.0 VDC           Logic 1 voltage threshold         ≥ 0.5 m A         2.5 V DC           Release current at logic state 1         ≥ 0.5 m A         ≤ 5 V DC           Logic 0 voltage threshold         ≤ 3.0 V DC         ≤ 5.5 m A           Release current at logic state 0         ≤ 0.2 m A         ≤ 0.5 m A           Response time         12 cycle times         12 cycle times           Inaccordance with cycle time (Tc) and input response time (Tr) in accordance with cycle time (Tc) and input response time (Tr) in (/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				
Input used as digital inputs         Input voltage         12 V DC (-13 % / +20 %)         24 V DC (-20 % / +25 %)           Input current         0.7 mA @ 10.44 VDC         1.6 mA @ 19.2 VDC         2.0 mA @ 19.2 VDC           0.9 mA @ 12.0 VDC         2.0 mA @ 24.0 V DC         2.0 mA @ 24.0 V DC           1.0 mA @ 14.4VDC         2.5 mA @ 30.0 VDC         1.0 mA @ 14.4VDC           Logic 1 voltage threshold         27 V DC         2.5 mA         3.0 0 VDC           Logic 1 voltage threshold         27 V DC         2.15 VDC         2.15 VDC           Adaing current at logic state 1         2.0 S mA         2.0 S mA         2.12 mA           Logic 0 voltage threshold         5.0 V DC         5.5 V DC         2.5 mA           Release current at logic state 0         5.0.2 mA         5.0 S mA         3.0.5 mA           Response time         12 cycle times         12 cycle times         12 cycle times           Maximum counting frequency         1 naccordance with cycle time (Tc) and input response time (Tr) in tr (2 x Tc) + Tr)         1 naccordance with cycle time (Tc) and input response time (Tr) in tr (2 x Tc) + Tr)           Sensor type         Contact or 3-wire PNP         Contact or 3-wire PNP         Contact or 3-wire PNP           Conforming to IEC/EN 61131-2         Type 1         Type 1         Type 1         Input type	Potentiometer control			
Input voltage12 V DC (-13 % / +20 %)24 V DC (-20 % / +25 %)Input current0.7 mA @ 10.44 VDC1.6 mA @ 19.2 VDC0.9 mA @ 12.0 VDC2.0 mA @ 24.0 V DC10 mA @ 14.4 VDC2.5 mA @ 30.0 VDCInput impedance14 kΩ12 kΩLogic 1 voltage threshold≥7 V DC≥15 VDCMaking current at logic state 1≥0.5 mA≥1.2 mALogic 0 voltage threshold≤3 V DC≤5 V DCRelease current at logic state 0≤0.2 mA≤0.5 mAResponse time1 →2 cycle times1 →2 cycle timesIn accordance with cycle time (Tc) and input response time (Tr):1/((2 x Tc) + Tr)VI ((2 x Tc) + Tr)1/((2 x Tc) + Tr)1/((2 x Tc) + Tr)Sensor typeContact or 3-wire PNPContact or 3-wire PNPConforming to IEC/EN 61131-2Type 1Type 1Input typeResistiveResistiveIsolation between power supply and inputsNoneNoneProtection against polarity inversionsYesYes		10 kΩ max.		10 kΩ max.
Input voltage12 V DC (-13 % / +20 %)24 V DC (-20 % / +25 %)Input current0.7 mA @ 10.44 VDC1.6 mA @ 19.2 VDC0.9 mA @ 12.0 VDC2.0 mA @ 24.0 V DC10 mA @ 14.4 VDC2.5 mA @ 30.0 VDCInput impedance14 kΩ12 kΩLogic 1 voltage threshold≥7 V DC≥15 VDCMaking current at logic state 1≥0.5 mA≥1.2 mALogic 0 voltage threshold≤3 V DC≤5 V DCRelease current at logic state 0≤0.2 mA≤0.5 mAResponse time1 →2 cycle times1 →2 cycle timesIn accordance with cycle time (Tc) and input response time (Tr):1/((2 x Tc) + Tr)VI ((2 x Tc) + Tr)1/((2 x Tc) + Tr)1/((2 x Tc) + Tr)Sensor typeContact or 3-wire PNPContact or 3-wire PNPConforming to IEC/EN 61131-2Type 1Type 1Input typeResistiveResistiveIsolation between power supply and inputsNoneNoneProtection against polarity inversionsYesYes	Inputs used as digital inputs			
Input current0.7 mA @ 10.44 VDC1.6 mA @ 19.2 VDC0.9 mA @ 12.0 VDC2.0 mA @ 24.0 V DC1.0 mA @ 14.4VDC2.5 mA @ 30.0 VDCInput impedance14 kQLogic 1 voltage threshold27 V DC20 voltage threshold27 V DC20 voltage threshold3 V DC20 voltage threshold53 V DCResponse time12 cycle times12 cycle times12 cycle timesMaximum counting frequency12 cycle times (Tc) and input response time (Tr)Naximum counting frequencyContact or 3-wire PNPContact or 3-wire PNPContact or 3-wire PNPContact or 3-wire PNPResistiveNoneNoneIsolation between power supply and inputsNoneNoneNoneProtection against polarity inversionsYesYesYes	· · · · · · · · · · · · · · · · · · ·	12 \/ DC ( 12 0/ / 20 0/)		24 \/ DC / 20 8/ / 25 8/)
0.9 mA @ 12.0 VDC 1.0 mA @ 14.4VDC2.0 mA @ 24.0 V DC 2.5 mA @ 30.0 VDCInput impedance14 kQ2.5 mA @ 30.0 VDCLogic 1 voltage threshold> 7 V DC> 15 VDCMaking current at logic state 1> 0.5 mA> 1.2 mALogic 0 voltage threshold< 3.0 VDC				
I.0 mA @ 14.4VDC2.5 mA @ 30.0 VDCInput impedance14 kQ12 kQLogic 1 voltage threshold> 7 V DC> 15 VDCMaking current at logic state 1> 0.5 mA> 1.2 mALogic 0 voltage threshold> 3 V DC> 5 V DCRelease current at logic state 0> 0.2 mA> 0.5 mAResponse time12 cycle times12 cycle timesIn accordance with cycle time (Tc) and input response time (T)1 -2 cycle timesSensor typeContact or 3-wire PNPContact or 3-wire PNPConforming to IEC/EN 61131-2Type 1Type 1Input typeResistiveResistiveIsolation between power supply and inputsNoneNoneProtection against polarity inversionsYesYes	Input current			
Input impedance         14 kΩ         12 kΩ           Logic 1 voltage threshold         ≥7 V DC         ≥15 VDC           Making current at logic state 1         ≥0.5 mA         ≥1.2 mA           Logic 0 voltage threshold         ≤3 V DC         ≤5 V DC           Release current at logic state 0         ≤0.2 mA         ≤0.5 mA           Response time         1 →2 cycle times         1 →2 cycle times           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)           Sensor type         Contact or 3-wire PNP         Contact or 3-wire PNP           Conforming to IEC/EN 61131-2         Type 1         Contact or 3-wire PNP           Isolation between power supply and inputs         None         Resistive           Isolation between inputs         None         None           Protection against polarity inversions         Yes         Yes				
Logic 1 voltage threshold         ≥ 7 V DC         ≥ 15 VDC           Making current at logic state 1         ≥ 0.5 mA         ≥ 1.2 mA           Logic 0 voltage threshold         ≤ 3 V DC         ≤ 5 V DC           Release current at logic state 0         ≤ 0.2 mA         ≤ 0.5 mA           Response time         1 →2 cycle times         1 →2 cycle times           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)           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				
Making current at logic state 1       ≥ 0.5 mA       ≥ 1.2 mA         Logic 0 voltage threshold       ≤ 3 V DC       ≤ 5 V DC         Release current at logic state 0       ≤ 0.2 mA       ≤ 0.5 mA         Response time       1 →2 cycle times       1 →2 cycle times         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)         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				
Logic 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         1 → 2 cycle times           Maximum counting frequency         In accordance with cycle time (Tc) and input response time (Tr) in accordance with cycle time (Tc) and input response time (Tc) a	Logic 1 voltage threshold	≥7VDC		≥ 15 VDC
Logic 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         1 → 2 cycle times           Maximum counting frequency         In accordance with cycle time (Tc) and input response time (Tr) in accordance with cycle time (Tc) and input response time (Tc) a	Making current at logic state 1	≥ 0.5 mA		≥ 1.2 mA
Release current at logic state 0       \$0.2 mA       \$0.5 mA         Response time       1 →2 cycle times       1 →2 cycle times         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)         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				
Response time $1 \rightarrow 2$ cycle times $1 \rightarrow 2$ cycle timesMaximum counting frequencyIn 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) : $1/((2 \times Tc) + Tr)$ Sensor typeContact or 3-wire PNPContact or 3-wire PNPConforming to IEC/EN 61131-2Type 1Type 1Input typeResistiveResistiveIsolation between power supply and inputsNoneNoneIsolation between inputsNoneNoneProtection against polarity inversionsYesYes	· · ·			
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)         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         Protection against polarity inversions       Yes       Yes				
I/((2 x Tc) + Tr)     I/((2 x Tc) + Tr)       Sensor type     Contact or 3-wire PNP       Conforming to IEC/EN 61131-2     Type 1       Input type     Resistive       Isolation between power supply and inputs     None       Isolation between inputs     None       Protection against polarity inversions     Yes			• • • • • • • • • • • • • • • • • • •	
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	Maximum counting frequency		t response time (Tr) :	
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				
Input type         Resistive         Resistive           Isolation between power supply and inputs         None         None           Isolation between inputs         None         None           Protection against polarity inversions         Yes         Yes	Sensor type	Contact or 3-wire PNP		Contact or 3-wire PNP
Isolation between power supply and inputs         None         None           Isolation between inputs         None         None           Protection against polarity inversions         Yes         Yes	Conforming to IEC/EN 61131-2	Type 1		Type 1
Isolation between power supply and inputs         None         None           Isolation between inputs         None         None           Protection against polarity inversions         Yes         Yes	Input type			
Isolation between inputs         None         None           Protection against polarity inversions         Yes         Yes				
Protection against polarity inversions Yes Yes				
Status indicator On LCD screen for CD and XD On LCD screen for CD and XD				
	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

11/03/2013

11/03/2013		www.ciouzei.coi
Max. breaking voltage	$5 \rightarrow 30 \text{ V DC}$	
	24 →250 V AC	
Max. Output Common Current	12A (10A UL) for O8, O9, OA	
Breaking current	CB-CD-XD10-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	
Mechanical life	At operating current : 0.1 Hz	
	10,000,000 (operations)	
Voltage for withstanding shocks	In accordance with IEC/EN 60947-1 and IEC/EN 60664-1 : 4 kV Make 10 ms	
Response time	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
	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	$\leq$ 2 V for I = 0.5 A (at state 1)	$\leq$ 2 V for I = 0.5 A (at state 1)
Response time	Make ≤ 1 ms	Make ≤ 1 ms
	Release ≤ 1 ms	Release ≤ 1 ms
Frequency (Hz)		
Built-in protections	Against overloads and short-circuits : Yes	Against overloads and short-circuits : Yes
	Against overvoltages (*) : Yes	Against overvoltages (*) : Yes
	Against inversions of power supply : Yes (*) In the absence of a volt-free contact between the logic	Against inversions of power supply : Yes (*) In the absence of a volt-free contact between the logic
	controller output and the load	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	14.11 Hz
	56.45 Hz	56.45 Hz
	112.90 Hz	112.90 Hz
	225.80 Hz 451.59 Hz	225.80 Hz 451.59 Hz
	1806.37 Hz	1806.37 Hz
DW/M suslis setis		$0 \rightarrow 100 \%$ (256 steps for CD, XD and 1024 steps for XA)
	$0 \rightarrow 100 \%$ (256 steps for CD, XD and 1024 steps for XA)	
PWM cyclic ratio Max. Breaking current PWM	$0 \rightarrow 100 \%$ (256 steps for CD, XD and 1024 steps for XA) 50 mA	50 mA
Max. Breaking current PWM		
Max. Breaking current PWM Max. cable length PWM (m)	50 mA 20	50 mA 20
Max. Breaking current PWM	50 mA	50 mA

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 $\rightarrow$ 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 1<sup>st</sup> quarter 2006

# Dimensions (mm)

CD20 Smart

