



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



› Millenium Evo expansion

XAP10

Analog expansion 10 I/O

- › Analog Expansion with 6 DI (4AI) and 4 DO (2PWM)
- › 12 bits for 0-10V & 11 bits for 4-20mA
- › Programmable PWM outputs from 0-100%
- › Can be used twice to reach 44 I/Os configuration
- › Power supply by the controller
- › XAP10



XAP10
Analog expansion 10 I/O

General characteristics	
Reference	88 975 303
Products certification	CE, cULus Listed
Conformity with the low voltage directive (in accordance with 2014/35/EU)	IEC/EN 61131-2 (Open equipment)
Conformity with the EMC directive (in accordance with 2014/30/EU)	IEC/EN 61000-6-1 (Residential, commercial and light-industrial environments) IEC/EN 61000-6-2 (Industrial) IEC/EN 61000-6-3 (Residential, commercial and light-industrial environments) IEC/EN 61000-6-4 (Industrial)
Earthing	None
Overvoltage category	3 in accordance with IEC/EN 60664-1
Pollution	Degree: 2 in accordance with IEC/EN 61131-2
Maximum utilization altitude	Operation: 2000 m Transport: 3000 m
Mechanical resistance	Immunity to vibrations IEC/EN 60068-2-6, Fc test Immunity to shock IEC/EN 60068-2-27, Ea test
Resistance to electrostatic discharge	Immunity to ESD IEC/EN 61000-4-2, level 3
Resistance to HF interference (Immunity)	Immunity to radiated electrostatic fields IEC/EN 61000-4-3, level 3 Immunity to fast transients (burst immunity) IEC/EN 61000-4-4, level 3 Immunity to shock waves IEC/EN 61000-4-5 Radio frequency in common mode IEC/EN 61000-4-6, level 3
Conducted and radiated emissions (in accordance with EN 55022/11 group 1)	Class B
Operation temperature	-20 °C (-4 °F) → +60 °C (140 °F) (+40 °C (104 °F) in a non-ventilated enclosure) UL: maximum surrounding air: +50 °C (122 °F)
Storage temperature	-40 °C (-40 °F) → +80 °C (176 °F)
Relative humidity	95% max. (no condensation or dripping water)
Screw terminals connection capacity	Flexible wire with ferrule: 1 conductor: 0.2 to 2.5 mm ² , AWG 24-14 Flexible wire with ferrule: 2 conductors: 0.2 to 0.75 mm ² , AWG 24-18 Rigid wire: 1 conductor: 0.2 to 2.5 mm ² , AWG 24-14 Rigid wire: 2 conductors: 0.2 to 0.75 mm ² , AWG 24-18 Tightening torque: 0.5 N.m (4.5 lb-in) (tighten using screwdriver diam. 3.5 mm) Stripping length: 6 mm
Material	Lexan, UL94V0, Halogen free 1272/2008/CE
On front panel color	Grey RAL 7035
On sole color	Black RAL 9011
Protection rating (in accordance with IEC/EN 60529)	IP 40 on front panel IP 20 on terminal block

Weight	Without packing: 105 g With packing: 145 g
Dimensions	Without packing: 60.4 x 90 x 60.3 mm / 2.37 x 3.54 x 2.37 inch With packing: 93 x 103 x 65 mm / 3.66 x 4.06 x 2.56 inch

Supply

Nominal voltage	Powered by the controller
Max. absorbed power	2.5 W

Inputs

Digital 24 VDC and analog inputs 12 bits / 10 V & 11 bits / 0-20 mA - 6 inputs from I1 to I6 (from I1 to I4 Analog)

Input used as digital input (power off state)

Input voltage	24 VDC (-15% / +20%)
Input current	1.5 mA @ 20.4 V 1.7 mA @ 24 V 2.1 mA @ 28.8 V
Input impedance	13.9 kΩ
Logic 1 voltage threshold	≥ 11 VDC
Making current at logic state 1	≥ 0.8 mA
Logic 0 voltage threshold	≤ 8 VDC
Release current at logic state 0	≤ 0.5 mA
Response time	1 to 2 cycle times
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	No
Status indicator	On LCD screen
Cable length	≤ 30 m

Input used as 0-10 V analogue input

Measuring range	0 → 10 V
Input impedance	13.9 kΩ
Maximum value without destruction	28.8 VDC max
Input type	Common mode
Resolution	12 bit / 10V
Value of LSB	2.45 mV
Conversion time	Controller cycle time
Maximum error at 25°C (77°F)	± 1.5 % of full scale
Maximum error at 55°C (131°F)	± 2 % of full scale
Repeat accuracy at 55°C (131°F)	± 0.8 %
Isolation between analogue channel and power supply	None
Protection against polarity inversions	Yes for voltage ≤ 10 V
Potentiometer control	2.2 kΩ / 0.5 W (recommended), 10 KΩ max.
Cable length	≤ 10 m with shielded twisted cable (sensor not isolated)

Input used as 0-20 mA analogue input

Measuring range	0 → 20 mA (4 → 20 mA by the application)
Input impedance	245 Ω
Maximum value without destruction	30 mA max
Input type	Common mode
Resolution	11 bit (normalized at 0 - 2000) / 20 mA
Value of LSB	10 μA
Conversion time	Controller cycle time
Maximum error at 25°C (77°F)	± 2 % of full scale

Maximum error at 55°C (131°F)	± 3 % of full scale
Repeat accuracy at 55°C (131°F)	± 1 %
Isolation between analogue channel and power supply	None
Protection against polarity inversions	Yes
Overvoltage protection	Yes. If the input voltage is > 7 V, this one is automatically switched on 0-10V configuration.
Cable length	≤ 30 m with shielded twisted cable (sensor not isolated)

Outputs

Digital / PWM solid state output - 2 solid state outputs from O1 to O2

Output used as digital output

Breaking voltage	10 → 28.8 VDC
Nominal voltage	12 / 24 VDC
Nominal current	0.5 A on resistive load @ 25°C (77°F)
Max. breaking current	0.625 A
Non repetitive overload current	1 A
Maximum breaking current in the common	1 A
Voltage drop	< 1 V for I = 0.5 A
Response time	Make = 1 cycle time + 30 µs typical Release = 1 cycle time + 40 µs typical
Built-in protections	Against overloads and short-circuits: Yes Against over voltages (*): Yes Against inversions of power supply: Yes (* In the absence of a potential free contact between the output of the programmable logic controller and the load
Min. load	1 mA
Galvanic isolation	No
Cable length	≤ 10 m

Truth table of the default	Command	Output	Fault
Normal condition	0	0	No
	1	1	No
Overheating	0	0	No
	1	0	Yes
Underpowered	0	0	X
	1	0	X
Short circuit (current limit)	0	0	No
	1	0	Yes

Output used as PWM output

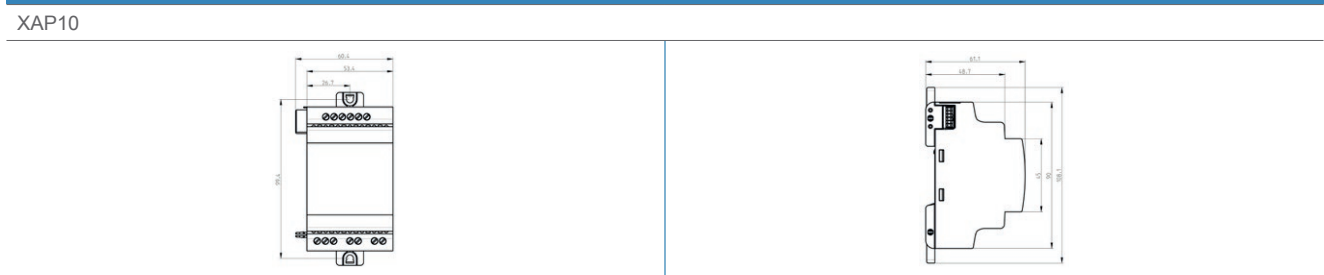
PWM frequency	14.11 Hz ; 56.45 Hz ; 112.90 Hz ; 225.80 Hz ; 451.59 Hz ; 1758.24 Hz
PWM cyclic ratio	0 → 100 % 100 steps
PWM Max. error	≤ 2 % (from 10 % → 90 %)
Status indicator	On LCD screen
Cable length	≤ 10 m with shielded twisted cable
Distance between the power source and the static outputs	≤ 30 m

Analog output - 2 outputs from O3 to O4

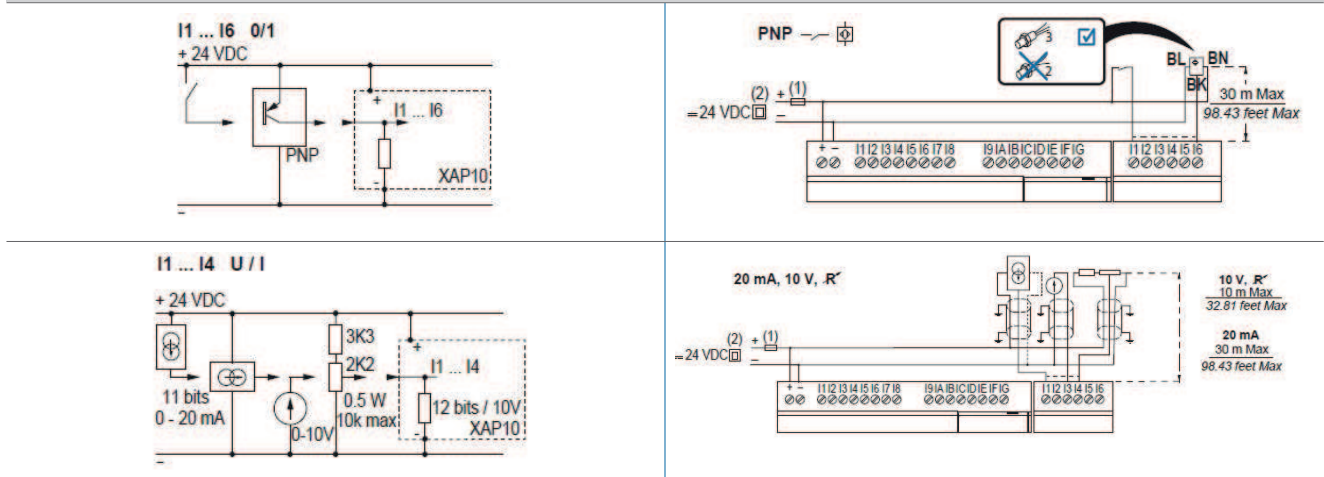
Output range	0 → 10 VDC
Load type	Resistive (≥ 1 KΩ)
Load Max.	≤ 10 mA
Non repetitive Max. load	20 mA
Resolution	10 bits (normalized at 0 – 1000)
Valeur du LSB	10 mV
Conversion time	Controller cycle time
Response time	≤ 300 ms
Maximum error at 25°C (77°F)	± 1 % of full scale
Maximum error at 55°C (131°F)	± 1.5 % of full scale

Built-in protections	Against overloads and short-circuits: Yes Against over voltages (*): Yes Against inversions of power supply: Yes (* In the absence of a volt-free contact between the output of the logic controller and the load
Galvanic isolation	No
Cable length	≤ 10 m with shielded twisted cable

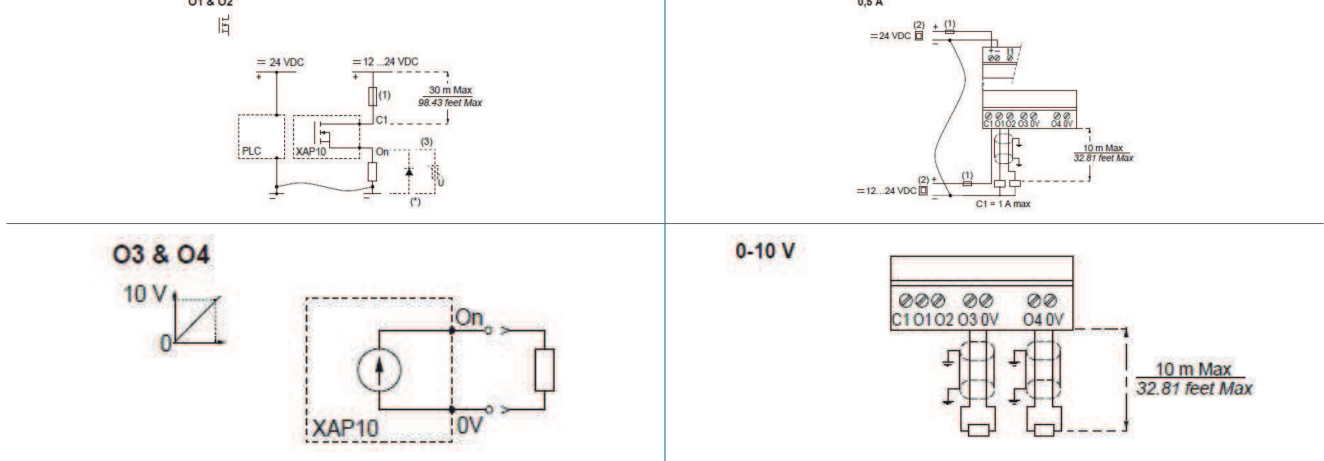
Technical sketches
Dimensions (mm)



Connections
INPUTS



OUTPUTS



Warning:
The product information contained in this catalogue is given purely as information and does not constitute a representation, warranty or any form of contractual commitment. Crouzet Automatismes SAS and its subsidiaries reserve the right to modify their products without notice. It is imperative that we should be consulted over any particular use or application of our products and it is the responsibility of the buyer to establish, particularly through all the appropriate tests, that the product is suitable for the use or application. Under no circumstances will our warranty apply, nor shall we be held responsible for any application (such as any modification, addition, deletion, use in conjunction with other electrical or electronic components, circuits or assemblies, or any other unsuitable material or substance) which has not been expressly agreed by us prior to the sale of our products.