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Data sheet 6AU1410-2AD00-0AA0



SIMOTION Drive-based Control Unit D410-2 DP/PN; programmable single-axis motion controller with multi-axis option; interfaces: 5 DI, 8 DI/DO, 3 F-DI, 1 F-DO, 1 AI, 1 encoder, 1 DRIVE-CLiQ, 1 PROFIBUS, 2 PROFINET ports, 1 ethernet Note: requires at least SCOUT/firmware V4.3 SP1 HF3

product brand name	SIMOTION
product type designation	D410-2 DP/PN
Version of the motion control system	Single-axis system with multi-axis option
PLC and motion control performance	
number of axes / maximum	8
Minimum PROFIBUS cycle clock	1 ms
Minimum PROFINET send cycle clock	0.25 ms
Minimum interpolator cycle clock	0.5 ms
Minimum servo cycle clock	0.5 ms
● note	1 ms when using the TO axis and the integrated closed-loop drive control
Integrated drive control / header	
Maximum number of axes for integrated drive control	
● servo	1
● vector	1
● V/f	1
● note	Alternative control modes; drive control based on SINAMICS S120 CU310-2, firmware version V4.x/V5.x
Memory	
RAM (work memory)	122 Mbyte
Additional RAM work memory for Java applications	20 Mbyte
RAM disk (load memory)	60 Mbyte
Retentive memory	108 kbyte
Persistent memory (user data on CF)	1.5 Gbyte
Communication	
Interfaces	
● DRIVE-CLiQ	1
● Industrial Ethernet	1
● PROFIBUS	1
— note	Equidistant and isochronous; Can be configured as master or slave
● PROFINET	1
— note	Interface with 2 ports; supports PROFINET IO with IRT and RT; configurable as PROFINET IO Controller and/or Device; supports media redundancy (MRP and MRPD)
General technical data	
Fan	Integrated
DC supply voltage	
● rated value	24 V
● minimum	20.4 V
● maximum	28.8 V
consumed current / typical	800 mA

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● note	with no load on inputs/outputs, no 24 V supply via DRIVE-CLiQ and PROFIBUS interface
Making current, typ.	3 A
Power loss, typ.	20 W
Ambient temperature, during	
● long-term storage	-25 ... +55 °C
● transport	-40 ... +70 °C
● operation	0 ... 55 °C
— note	Maximum installation altitude 4000 m (13124 ft) above sea level. Above an altitude of 2000 m (6562 ft), the maximum ambient temperature decreases by 7 °C (12.6 °F) per 1000 m (3281 ft).
Relative humidity	
● during operation	5 ... 95 %
● without condensation, tested acc. to IEC 60068-2-38	Wert fehlt
Air pressure	620 ... 1 060 hPa
Degree of protection	IP20 / UL open type
height	190.7 mm
width	73 mm
● depth	74.4 mm
net weight	830 g
Digital inputs / header	
number of digital inputs	11
Digital inputs / note	of which: 5 DI and 3 F-DI (= 6 DI)
DC input voltage	
● rated value	24 V
● for signal "1"	15 ... 30 V
● for signal "0"	-3 ... +5 V
Electrical isolation	Yes
Current consumption for "1" signal level, typ.	3.5 mA
Input delay time for	
● signal "0" → "1", typ.	50 µs
● signal "1" → "0", typ.	150 µs
Digital inputs/outputs / header	
Number of digital I/Os	8
Parameterization possibility of the digital I/Os	can be parameterized - as DI - as DO - as probe input (max. 8) - as cam output (max. 8)
If used as an input / header	
DC input voltage	
● rated value	24 V
● for signal "1"	15 ... 30 V
● for signal "0"	-3 ... +5 V
Electrical isolation	No
Current consumption for "1" signal level, typ.	3.5 mA
Input delay time for	
● signal "0" → "1", typ.	5 µs
● signal "1" → "0", typ.	50 µs
Measuring input / reproducibility	5 µs
● note	typical value
Measuring input / resolution	1 µs
If used as an output / header	
Load voltage	
● rated value	24 V
● minimum	20.4 V
● maximum	28.8 V
Electrical isolation	No
Current carrying capacity for each output, max.	500 mA
Leakage current, max.	2 mA
Output delay for	
● signal "0" → "1", typ.	150 µs

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● signal "0" → "1", max.	400 µs
● signal "1" → "0", typ.	75 µs
● signal "1" → "0", max.	100 µs
— note	Data for Vcc = 24 V; load 48 Ohm; "1" = 90 % VOut, "0" = 10 % VOut
Cam output	
● reproducibility	125 µs
— note	typical value
● resolution	125 µs
— note	typical value
Switching frequency of the outputs for	
● resistive load, max.	100 Hz
● inductive load, max.	0.5 Hz
● lamp load, max.	10 Hz
Short-circuit protection	Yes
Digital outputs / header	
Number of digital outputs	1
Parameterization possibility of the digital outputs	can be parameterized as F-DO or DO
Load voltage	
● rated value	24 V
● minimum	20.4 V
● maximum	28.8 V
Electrical isolation	Yes
Current carrying capacity for each output, max.	500 mA
Leakage current, max.	2 mA
Output delay for	
● signal "0" → "1", typ.	150 µs
● signal "0" → "1", max.	400 µs
● signal "1" → "0", typ.	75 µs
● signal "1" → "0", max.	100 µs
— note	Data for Vcc = 24 V; load 48 Ohm; "1" = 90 % VOut, "0" = 10 % VOut
Short-circuit protection	Yes
Analog inputs / header	
number of analog inputs	1
If used as an voltage input / header	
Input voltage	-10 ... +10 V
Resolution	12 bit
● note	+sign
Input resistance (Ri)	100 kΩ
If used as an current input / header	
Input current	-20 ... +20 mA
Resolution	11 bit
● Note	+ sign
Input resistance (Ri)	250 Ω
Onboard encoder interface / header	
Encoder interface	optional incremental encoder TTL, incremental encoder HTL or absolute encoder SSI without incremental signals TTL/HTL
Encoder supply for	
● 24 VDC	0.35 A
● 5 VDC	0.35 A
Limiting frequency, max.	500 kHz
SSI baud rate	100 ... 1 000
Resolution of absolute position SSI	30 bit
Cable length for	
● TTL incremental encoder, max.	100 m
● HTL incremental encoder for	
— unipolar signals, max.	100 m
— bipolar signals, max.	300 m
— note	TTL only bipolar signals; for bipolar signals, the signal lines must be twisted in pairs and shielded

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● SSI absolute encoder, max.	100 m
— note	max. cable length depends on the baud rate
Additional technical data	
design of the sensor / to detect the ambient temperature / connectable	KTY84-130, PT1000 or PTC
Back-up of non-volatile data	
● of retentive data	unlimited buffer duration
● of real-time clock, min.	5 d
● note	Data buffering is maintenance-free
Approvals	
● USA	cULus
● Canada	cULus
● Australia	RCM (formerly C-Tick)
● Korea	KCC
● Russia, Belarus and Kazakhstan	EAC



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