

SPARE PART SIMOTION DRIVE-BASED CONTROL UNIT D410 PN; PROGRAMMABLE SINGLE-AXIS MOTION CONTROLLER; INTERFACES: 4 DI, 4 DI/DO, 1 EP, 1 TEMP, 1 ENCODER, 1 DRIVE-CLIQ, 2 PROFINET PORTS



Article number	
product brandname	SIMOTION
Product type designation	D410 PN
Version of the motion control system	Single-axis system

PLC and motion control performance	
Number of axes / maximum	1
Maximum number of axes / note	The value indicated refers to real axes; virtual axes can be used additionally.
Minimum PROFINET send cycle clock	0.5 ms
Minimum interpolator cycle clock	2 ms
Minimum servo cycle clock	2 ms

Integrated drive control	
Maximum number of axes for integrated drive control	
<ul style="list-style-type: none"> • servo • vector • V/f • note 	<p>1</p> <p>1</p> <p>1</p> <p>Alternative control modes; drive control based on SINAMICS S120 CU310, firmware version V2.x</p>

Memory

RAM (work memory)	38 Mbyte
Additional RAM work memory for Java applications	20 Mbyte
RAM disk (load memory)	23 Mbyte
Retentive memory	9 kbyte
Persistent memory (user data on CF)	300 Mbyte

Communication

Interfaces	
<ul style="list-style-type: none"> • DRIVE-CLiQ • PROFINET — note 	<p>1</p> <p>1</p> <p>1 interface with 2 ports: - supports PROFINET IO with IRT and RT - can be configured as PROFINET IO controller and/or device</p>

General technical data

Fan	Integrated
DC supply voltage	
<ul style="list-style-type: none"> • rated value • minimum • maximum 	<p>24 V</p> <p>20.4 V</p> <p>28.8 V</p>
Consumed current / typical	800 mA
<ul style="list-style-type: none"> • Note 	with no load on inputs/outputs, no 24 V supply via DRIVE-CLiQ interface
Making current, typ.	3 A
Power loss [W] / typical	20 W
Ambient temperature, during	
<ul style="list-style-type: none"> • storage • transport • operation — note 	<p>-40 ... +70 °C</p> <p>-40 ... +70 °C</p> <p>0 ... 55 °C</p> <p>Maximum 5000 m (16405 ft) above sea level. Above an altitude of 2000 m (6562 ft), the max. ambient temperature decreases by 7 °C (44.6 °F) every 1000 m (3281 ft).</p>
Relative humidity	
<ul style="list-style-type: none"> • during operation • without condensation, tested acc. to IEC 60068-2-38 	<p>5 ... 95 %</p> <p>Wert fehlt</p>
Air pressure	700 ... 1 060 hPa
Degree of protection	IP20
Height	183.2 mm
Width	73 mm
Depth	89.6 mm
Net weight	990 g

Digital inputs

Number of digital inputs	4
DC input voltage	

<ul style="list-style-type: none"> • rated value 	24 V
<ul style="list-style-type: none"> • for signal "1" 	15 ... 30 V
<ul style="list-style-type: none"> • for signal "0" 	-3 ... +5 V
Electrical isolation	Yes
<ul style="list-style-type: none"> • note 	Yes, in groups of 4
Current consumption for "1" signal level, typ.	10 mA
Input delay time for	
<ul style="list-style-type: none"> • signal "0" → "1", typ. 	50 μs
<ul style="list-style-type: none"> • signal "1" → "0", typ. 	150 μs

Digital inputs/outputs

Number of digital I/Os	4
Parameterization possibility of the digital I/Os	parameterizable as DI, as DO, as measuring input input (max. 3), as output of output cam (max. 4)

If used as an input

DC input voltage	
<ul style="list-style-type: none"> • rated value 	24 V
<ul style="list-style-type: none"> • for signal "1" 	15 ... 30 V
<ul style="list-style-type: none"> • for signal "0" 	-3 ... +5 V
Electrical isolation	No
Current consumption for "1" signal level, typ.	10 mA
Input delay time for DI 9 to DI 11 for	
<ul style="list-style-type: none"> • signal "0" → "1", typ. 	5 μs
<ul style="list-style-type: none"> • signal "1" → "0", typ. 	50 μs
— note	can also be used as probe inputs
Input delay time for DI 8 for	
<ul style="list-style-type: none"> • signal "0" → "1", typ. 	50 μs
<ul style="list-style-type: none"> • signal "1" → "0", typ. 	100 μs
Measuring input / reproducibility	5 μs

If used as an output

Load voltage	
<ul style="list-style-type: none"> • rated value 	24 V
<ul style="list-style-type: none"> • minimum 	20.4 V
<ul style="list-style-type: none"> • maximum 	28.8 V
Electrical isolation	No
Current carrying capacity for each output, max.	500 mA
Leakage current, max.	2 mA
Output delay for	
<ul style="list-style-type: none"> • signal "0" → "1", typ. 	150 μs
<ul style="list-style-type: none"> • signal "0" → "1", max. 	400 μs
<ul style="list-style-type: none"> • signal "1" → "0", typ. 	75 μs
<ul style="list-style-type: none"> • signal "1" → "0", max. 	100 μs

— note	Data for Vcc = 24 V; load 48 Ohm; "1" = 90 % VOut, "0" = 10 % VOut
Cam output	
• reproducibility	200 µs
— note	typ. 200 µs for 3 ms bus/servo cycle; typ. 300 µs for 6 ms bus/servo cycle
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

Onboard encoder interface	
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 ... 250
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
• SSI absolute encoder, max.	100 m

Additional technical data	
Design of the sensor / to detect the ambient temperature / connectable	KTY84-130 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