

\*\*\*SPARE PART\*\*\* SIMOTION DRIVE-BASED CONTROL UNIT D445-1; PROGRAMMABLE MOTION CONTROLLER; HIGH PERFORMANCE; INTERFACES: 8 DI, 8 DI/DO, 6 DRIVE-CLIQ, 2 PROFIBUS, 2 ETHERNET, 2 USB, 1 OPTION SLOT; INCL. DUAL FAN / BATTERY MODULE AND BATTERY (REQUIRES >=V4.1 SP2 HF3/4)



Order number	
product brand name	SIMOTION
Product type designation	D445-1
Performance class for motion control system	HIGH Performance
Version of the motion control system	Multiple-axis system

PLC and motion control performance	
Number of axes / maximum	64
Minimum PROFIBUS cycle clock	1 ms
Minimum PROFINET send cycle clock	0.5 ms
Minimum interpolator cycle clock	0.5 ms
Minimum servo cycle clock	0.5 ms

Integrated drive control	
Maximum number of axes for integrated drive control	
<ul style="list-style-type: none"> <li>• servo</li> <li>• vector</li> <li>• V/f</li> <li>• note</li> </ul>	<p>6</p> <p>4</p> <p>8</p> <p>Alternative control modes; drive control based on SINAMICS S120 CU320, firmware version V2.x</p>

Memory	
RAM (work memory)	96 Mbyte
Additional RAM work memory for Java applications	20 Mbyte
RAM disk (load memory)	59 Mbyte
Retentive memory	364 kbyte
Persistent memory (user data on CF)	300 Mbyte

Communication	
Interfaces	
<ul style="list-style-type: none"> <li>• DRIVE-CLiQ</li> </ul>	6
<ul style="list-style-type: none"> <li>• USB</li> </ul>	2
<ul style="list-style-type: none"> <li>• Industrial Ethernet</li> </ul>	2
<ul style="list-style-type: none"> <li>• PROFIBUS</li> <li>— note</li> </ul>	2 Equidistant and isochronous; Can be configured as master or slave
<ul style="list-style-type: none"> <li>• PROFINET</li> <li>— note</li> </ul>	0 Optional via CBE30; 1 interface with 4 ports; supports PROFINET IO with IRT and RT; configurable as a PROFINET IO controller and/or device

General technical data	
Fan	Double fan/battery module included in scope of delivery
DC supply voltage	
<ul style="list-style-type: none"> <li>• rated value</li> </ul>	24 V
<ul style="list-style-type: none"> <li>• minimum</li> </ul>	20.4 V
<ul style="list-style-type: none"> <li>• maximum</li> </ul>	28.8 V
Consumed current / typical	1 000 mA
<ul style="list-style-type: none"> <li>• Note</li> </ul>	with no load on inputs/outputs, no 24 V supply via DRIVE-CLiQ and PROFIBUS interface
Making current, typ.	5 A
Power loss [W] / typical	24 W
Ambient temperature, during	
<ul style="list-style-type: none"> <li>• storage</li> </ul>	-40 ... +70 °C
<ul style="list-style-type: none"> <li>• transport</li> </ul>	-40 ... +70 °C
<ul style="list-style-type: none"> <li>• operation</li> <li>— note</li> </ul>	0 ... 55 °C 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).
Relative humidity	
<ul style="list-style-type: none"> <li>• during operation</li> </ul>	5 ... 95 %
<ul style="list-style-type: none"> <li>• without condensation / during operation / maximum / Note</li> </ul>	Wert fehlt
Air pressure	700 ... 1 060 hPa
Degree of protection	IP20
Height	380 mm

Width	50 mm
Depth	270 mm
<ul style="list-style-type: none"> <li>Note</li> </ul>	When the spacer is removed 230 mm (9.05 in) deep
Net weight	3 100 g

#### Digital inputs

Number of digital inputs	8
DC input voltage	
<ul style="list-style-type: none"> <li>rated value</li> <li>for signal "1"</li> <li>for signal "0"</li> </ul>	24 V 15 ... 30 V -3 ... +5 V
Electrical isolation	Yes
<ul style="list-style-type: none"> <li>note</li> </ul>	Yes, in groups of 4
Current consumption for "1" signal level, typ.	10 mA
Input delay time for	
<ul style="list-style-type: none"> <li>signal "0" → "1", typ.</li> <li>signal "1" → "0", typ.</li> </ul>	50 μs 150 μs

#### Digital inputs/outputs

Number of digital I/Os	8
Parameterization possibility of the digital I/Os	parameterizable as DI, as DO, as measuring input input (max. 6), as output of output cam (max. 8)

#### If used as an input

DC input voltage	
<ul style="list-style-type: none"> <li>rated value</li> <li>for signal "1"</li> <li>for signal "0"</li> </ul>	24 V 15 ... 30 V -3 ... +5 V
Electrical isolation	No
Current consumption for "1" signal level, typ.	10 mA
Input delay time for	
<ul style="list-style-type: none"> <li>signal "0" → "1", typ.</li> <li>signal "1" → "0", typ.</li> </ul>	5 μs 50 μs
Measuring input / reproducibility	5 μs

#### If used as an output

Load voltage	
<ul style="list-style-type: none"> <li>rated value</li> <li>minimum</li> <li>maximum</li> </ul>	24 V 20.4 V 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"> <li>signal "0" → "1", typ.</li> </ul>	150 μs

<ul style="list-style-type: none"> <li>• signal "0" → "1", max.</li> <li>• signal "1" → "0", typ.</li> <li>• signal "1" → "0", max.</li> <li>— note</li> </ul>	<p>400 μs</p> <p>75 μs</p> <p>100 μs</p> <p>Data for Vcc = 24 V; load 48 Ohm; "1" = 90 % VOut, "0" = 10 % VOut</p>
<p>Cam output</p> <ul style="list-style-type: none"> <li>• reproducibility</li> </ul>	<p>125 μs</p>
<p>Switching frequency of the outputs for</p> <ul style="list-style-type: none"> <li>• resistive load, max.</li> <li>• inductive load, max.</li> <li>• lamp load, max.</li> </ul>	<p>100 Hz</p> <p>2 Hz</p> <p>11 Hz</p>
<p>Short-circuit protection</p>	<p>Yes</p>

#### Additional technical data

<p>Back-up of non-volatile data</p> <ul style="list-style-type: none"> <li>• of retentive data</li> <li>• of real-time clock, min.</li> <li>• note</li> </ul>	<p>at least 5 days</p> <p>5 d</p> <p>longer buffer duration of the retentive data and the real-time clock using a battery inserted in the double fan/battery module</p>
<p>Approvals</p> <ul style="list-style-type: none"> <li>• USA</li> <li>• Canada</li> <li>• Australia</li> </ul>	<p>cULus</p> <p>cULus</p> <p>RCM (formerly C-Tick)</p>