

SIMATIC DP, ELECTRONIC MODULE FOR ET 200S, 1 POS U, CONTROLLED POSITIONING WITH DIGITAL OUTPUTS FOR 5V/24V INCREMENTAL ENCODER, SSI-ENCODER, 30MM WIDE



Supply voltage	
Load voltage L+	
• Rated value (DC)	24 V
• permissible range, lower limit (DC)	20.4 V
• permissible range, upper limit (DC)	28.8 V
• Reverse polarity protection	Yes
Input current	
from load voltage L+ (without load), max.	55 mA
from backplane bus 3.3 V DC, max.	10 mA
Encoder supply	
5 V encoder supply	
• 5 V	No
24 V encoder supply	
• 24 V	Yes
• Short-circuit protection	Yes
• Output current, max.	500 mA
Absolute encoder (SSI) encoder supply	
• Absolute encoder (SSI)	Yes

<ul style="list-style-type: none"> <li>• Type of output voltage</li> </ul>	L+ (-0.8 V)
<ul style="list-style-type: none"> <li>• short-circuit protection</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Output current, max.</li> </ul>	500 mA
<b>Power loss</b>	
Power loss, typ.	2 W
<b>Digital inputs</b>	
Input characteristic curve in accordance with IEC 61131, type 2	Yes
<b>Input voltage</b>	
<ul style="list-style-type: none"> <li>• Rated value (DC)</li> </ul>	24 V
<ul style="list-style-type: none"> <li>• for signal "0"</li> </ul>	-30 to +5V
<ul style="list-style-type: none"> <li>• for signal "1"</li> </ul>	+11 to +30V
<b>Input current</b>	
<ul style="list-style-type: none"> <li>• for signal "0", max. (permissible quiescent current)</li> </ul>	2 mA
<ul style="list-style-type: none"> <li>• for signal "1", typ.</li> </ul>	9 mA
<b>Cable length</b>	
<ul style="list-style-type: none"> <li>• unshielded, max.</li> </ul>	50 m
<b>Digital outputs</b>	
Short-circuit protection	Yes
<ul style="list-style-type: none"> <li>• Response threshold, typ.</li> </ul>	0.7 to 1.8 A
Limitation of inductive shutdown voltage to	Yes; L+ (-55 to 60 V)
Controlling a digital input	Yes
<b>Switching capacity of the outputs</b>	
<ul style="list-style-type: none"> <li>• on lamp load, max.</li> </ul>	5 W
<b>Output voltage</b>	
<ul style="list-style-type: none"> <li>• Rated value (DC)</li> </ul>	24 V
<ul style="list-style-type: none"> <li>• for signal "0", max.</li> </ul>	3 V
<ul style="list-style-type: none"> <li>• for signal "1", min.</li> </ul>	L+ (-1 V)
<b>Output current</b>	
<ul style="list-style-type: none"> <li>• for signal "1" permissible range for 0 to 60 °C, min.</li> </ul>	7 mA
<ul style="list-style-type: none"> <li>• for signal "1" permissible range for 0 to 60 °C, max.</li> </ul>	600 mA
<ul style="list-style-type: none"> <li>• for signal "0" residual current, max.</li> </ul>	0.3 mA
<b>Output delay with resistive load</b>	
<ul style="list-style-type: none"> <li>• "0" to "1", max.</li> </ul>	typically 150 µs
<ul style="list-style-type: none"> <li>• "1" to "0", max.</li> </ul>	typically 150 µs
<b>Switching frequency</b>	
<ul style="list-style-type: none"> <li>• with resistive load, max.</li> </ul>	100 Hz
<ul style="list-style-type: none"> <li>• with inductive load, max.</li> </ul>	2 Hz

• on lamp load, max.	10 Hz
<b>Cable length</b>	
• shielded, max.	1 000 m
• unshielded, max.	600 m
<b>Encoder</b>	
Number of connectable encoders, max.	1
<b>Connectable encoders</b>	
• Incremental encoder (symmetrical)	Yes
• Incremental encoder (asymmetrical)	Yes
• Absolute encoder (SSI)	Yes
• 2-wire sensor	Yes; Type 2
<b>Encoder signals, incremental encoder (symmetrical)</b>	
<b>Encoder signal 5 V</b>	
— Signal level	to RS-422
— Terminating resistor	330 Ω
— Differential input voltage, min.	1 V
— Input frequency, max.	500 kHz
— Cable length, shielded, max.	50 m
<b>Encoder signal 24 V</b>	
— Input voltage for signal "0"	5 V
— Input voltage for signal "1"	30 V
— Input current for signal "0", max. (permissible quiescent current)	2 mA
— Input current for signal "1", typ.	9 mA
— Input frequency, max.	100 kHz
— Cable length, shielded, max.	50 m
<b>Encoder signals, absolute encoder (SSI)</b>	
• Cable length, shielded, max.	320 m at 125 kHz, 160 m at 250 kHz, 60 m at 500 kHz, 20 m at 1 MHz, 8 m at 2 MHz, twisted in pairs and shielded
• Monoflop time	64 μs
<b>Updating the encoder value</b>	
— Telegram runtime at 13 bit, min.	7 μs
— Telegram runtime at 25 bit, min.	13 μs
<b>Response times</b>	
Updating time of the feedback messages	1 ms
Latch	In the case of incremental encoders: typ. 400 ms; in the case of SSI encoders: typ. 400 ms + age of the encoder value:
Response time at switchover/switchoff point	In the case of incremental encoders: output delay + 30 μs; in the case of SSI encoders: output delay + message frame runtime + 30 ms
<b>Interrupts/diagnostics/status information</b>	

#### Diagnostics indication LED

• Actual value falling DN (green)	Yes
• Actual value rising UP (green)	Yes
• Positioning mode POS (green)	Yes
• Group error SF (red)	Yes
• Status indicator digital input (green)	Yes

#### Potential separation

between backplane bus and all other circuit components	Yes
between the channels and backplane bus	Yes

#### Dimensions

Width	30 mm
Height	81 mm
Depth	52 mm

#### Weights

Weight, approx.	65 g
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**last modified:** 03/07/2017