

SIMATIC S7-200 SMART, Digital I/O SM DT16, 8DI/8DO, 8 DI 24 V DC, Sink/Source, 8 DO, Transistor 0.75A

General information	
Product type designation	SM DT16, DI 8x24 V DC, DQ 8x24 V DC/0.75 A
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Input current	
from backplane bus 5 V DC, typ.	115 mA; For 5 V DC from CPU module
Digital inputs	
Number of digital inputs	8
• in groups of	2
Parallel switching of inputs	Yes
Input characteristic curve in accordance with IEC 61131, type 1	Yes
Number of simultaneously controllable inputs	
horizontal installation	
— up to 50 °C, max.	8
vertical installation	
— up to 40 °C, max.	8
Input voltage	
• Type of input voltage	DC
• Rated value (DC)	24 V
• for signal "0"	< 5 V DC
• for signal "1"	+15 to +30 V
Input current	
• for signal "0", max. (permissible quiescent current)	1 mA
• for signal "1", min.	2.5 mA
• for signal "1", max.	5 mA
• for signal "1", typ.	4 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— at "0" to "1", max.	200 µs
— at "1" to "0", max.	200 µs
Cable length	
• shielded, max.	500 m
• unshielded, max.	300 m
Digital outputs	
Number of digital outputs	8
• in groups of	2
Current-sinking	No
Current-sourcing	Yes
Short-circuit protection	No
Switching capacity of the outputs	
• with resistive load, max.	0.75 A
• on lamp load, max.	5 W
Output voltage	
• Rated value (DC)	24 V
• for signal "0", max.	0.1 V
• for signal "1", min.	20 V
• for signal "1", max.	28.8 V; max. value is equal to feed L+
Output current	
• for signal "1" rated value	0.75 A

<b>Output delay with resistive load</b>	
<ul style="list-style-type: none"> <li>• "0" to "1", max.</li> </ul>	50 $\mu$ s
<ul style="list-style-type: none"> <li>• "1" to "0", max.</li> </ul>	200 $\mu$ s
<b>Parallel switching of two outputs</b>	
<ul style="list-style-type: none"> <li>• for logic links</li> </ul>	Yes; only outputs of the same group
<ul style="list-style-type: none"> <li>• for uprating</li> </ul>	Yes; possible (only outputs of the same group)
<ul style="list-style-type: none"> <li>• for redundant control of a load</li> </ul>	Yes; only outputs of the same group
<b>Total current of the outputs (per group)</b>	
all mounting positions	
— up to 40 °C, max.	3 A
horizontal installation	
— up to 50 °C, max.	3 A
vertical installation	
— up to 40 °C, max.	3 A
all other mounting positions	
— up to 40 °C, max.	3 A
<b>Interrupts/diagnostics/status information</b>	
Diagnostics indication LED	
<ul style="list-style-type: none"> <li>• for status of the inputs</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• for status of the outputs</li> </ul>	Yes
<b>Potential separation</b>	
Potential separation digital inputs	
<ul style="list-style-type: none"> <li>• between the channels</li> </ul>	Yes; Optocoupler
Potential separation digital outputs	
<ul style="list-style-type: none"> <li>• between the channels</li> </ul>	Yes; Optocoupler
<b>Isolation</b>	
Isolation tested with	500V AC for 1 minute
<b>EMC</b>	
Interference immunity against discharge of static electricity	
<ul style="list-style-type: none"> <li>• Interference immunity against discharge of static electricity acc. to IEC 61000-4-2</li> </ul>	Yes; $\pm$ 4 kV contact discharge (to IEC 801-2/IEC 1000-4-2; ESD), $\pm$ 8 kV air discharge (to IEC 801-2/IEC 1000-4-2; ESD)
— Test voltage at air discharge	8 kV
— Test voltage at contact discharge	4 kV
Interference immunity against high-frequency electromagnetic fields	
<ul style="list-style-type: none"> <li>• Interference immunity against high-frequency radiation acc. to IEC 61000-4-3</li> </ul>	Yes
— Frequency range of the RF radiation	80 to 1000 MHz, 10 V/m, 1.4 to 2.0 GHz, 3 V/m, 2.0 to 2.7 GHz, 1 V/m (In the range of 87 MHz to 187 MHz, 174 MHz to 230 MHz and 470 MHz to 790 MHz: 3V/m )
Interference immunity to cable-borne interference	
<ul style="list-style-type: none"> <li>• Interference immunity on supply lines acc. to IEC 61000-4-4</li> </ul>	Yes; 2 kV acc. to IEC 61000-4-4, burst
<ul style="list-style-type: none"> <li>• Interference immunity on signal cables acc. to IEC 61000-4-4</li> </ul>	Yes; $\pm$ 2 kV acc. to IEC 61000-4-4, Burst
Interference immunity against voltage surge	
<ul style="list-style-type: none"> <li>• Interference immunity on supply lines acc. to IEC 61000-4-5</li> </ul>	Yes; With upstream protective element
<ul style="list-style-type: none"> <li>• asymmetric interference</li> </ul>	
— Test voltage on supply cables	2 kV
— Test voltage on signal cables >30m	2 kV
Interference immunity against conducted variable disturbance induced by high-frequency fields	
<ul style="list-style-type: none"> <li>• Interference immunity against high frequency current feed acc. to IEC 61000-4-6</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Interference immunity against high-frequency radiation acc. to IEC 61000-4-6</li> </ul>	Yes; 10 V/m, with 80% amplitude modulation at 1 kHz
— Test voltage at 80% amplitude modulation with 1kHz in the range 9 kHz to 80 MHz	10 V
Emission of radio interference acc. to EN 55 011	
<ul style="list-style-type: none"> <li>• Emission of radio interference</li> </ul>	Interference emission to EN 50081-2, testing to EN 55011, Class A, Group 1
<ul style="list-style-type: none"> <li>• Limit class A, for use in industrial areas</li> </ul>	Yes
<b>Degree and class of protection</b>	
IP degree of protection	IP20
<b>Dimensions</b>	

Width	45 mm
Height	100 mm
Depth	81 mm
<b>Weights</b>	
Weight, approx.	179.7 g

**last modified:** 3/12/2024 