

Data sheet

6ES7288-2DT16-0AA0

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	
<ul style="list-style-type: none"> • for signal "1" rated value 	0.75 A
Output delay with resistive load	
<ul style="list-style-type: none"> • "0" to "1", max. 	50 µs
<ul style="list-style-type: none"> • "1" to "0", max. 	200 µs
Parallel switching of two outputs	
<ul style="list-style-type: none"> • for logic links 	Yes; only outputs of the same group
<ul style="list-style-type: none"> • for uprating 	Yes; possible (only outputs of the same group)
<ul style="list-style-type: none"> • for redundant control of a load 	Yes; only outputs of the same group
Total current of the outputs (per group)	
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
Interrupts/diagnostics/status information	
Diagnostics indication LED	
<ul style="list-style-type: none"> • for status of the inputs 	Yes
<ul style="list-style-type: none"> • for status of the outputs 	Yes
Potential separation	
Potential separation digital inputs	
<ul style="list-style-type: none"> • between the channels 	Yes; Optocoupler
Potential separation digital outputs	
<ul style="list-style-type: none"> • between the channels 	Yes; Optocoupler
Isolation	
Isolation tested with	500 V AC for 1 minute
EMC	
Interference immunity against discharge of static electricity	
<ul style="list-style-type: none"> • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 	Yes; ±4 kV contact discharge (to IEC 801-2/IEC 1000-4-2; ESD), ±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"> • Interference immunity against high-frequency radiation acc. to IEC 61000-4-3 	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"> • Interference immunity on supply lines acc. to IEC 61000-4-4 	Yes; 2 kV acc. to IEC 61000-4-4, burst
<ul style="list-style-type: none"> • Interference immunity on signal cables acc. to IEC 61000-4-4 	Yes; ±2 kV acc. to IEC 61000-4-4, Burst
Interference immunity against voltage surge	
<ul style="list-style-type: none"> • Interference immunity on supply lines acc. to IEC 61000-4-5 	Yes; With upstream protective element
Interference immunity against conducted variable disturbance induced by high-frequency fields	
<ul style="list-style-type: none"> • Interference immunity against high frequency current feed acc. to IEC 61000-4-6 	Yes
<ul style="list-style-type: none"> • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 	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"> • Emission of radio interference 	Interference emission to EN 50081-2, testing to EN 55011, Class A, Group 1
<ul style="list-style-type: none"> • Limit class A, for use in industrial areas 	Yes
Degree and class of protection	
IP degree of protection	IP20

Dimensions	
Width	45 mm
Height	100 mm
Depth	81 mm

Weights	
Weight, approx.	179.7 g

Classifications			
		Version	Classification
	eClass	14	27-24-22-04
	eClass	12	27-24-22-04
	eClass	9.1	27-24-22-04
	eClass	9	27-24-22-04
	eClass	8	27-24-22-04
	eClass	7.1	27-24-22-04
	eClass	6	27-24-22-04
	ETIM	10	EC001419
	ETIM	9	EC001419
	ETIM	8	EC001419
	ETIM	7	EC001419
	IDEA	4	3566
	UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval



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