SIEMENS

Data sheet 6ES7288-2DE16-0AA0

	SIMATIC S7-200 SMART, Digital input EM DI16, 16 DI, 24V DC, Sink/Source
General information	
Product type designation	SM DI16, DI 16x24 V DC
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	
Current consumption, typ.	4 mA; Current for 24 V DC input per channel
Current consumption, max.	5 mA; Current for 30 V DC input per channel
from backplane bus 5 V DC, typ.	85 mA; For 5 V DC from CPU module
from backplane bus 5 V DC, max.	105 mA; For 5 V DC from CPU module
Digital inputs	
Number of digital inputs	16
● in groups of	4
Parallel switching of inputs	Yes
Input characteristic curve in accordance with IEC 61131, type 1	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 40 °C, max.	16
horizontal installation	
— up to 50 °C, max.	16
vertical installation	
— up to 40 °C, max.	16
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.	5.5 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	0
Cable length	
● shielded, max.	500 m
● unshielded, max.	300 m
Interrupts/diagnostics/status information	
Diagnostics indication LED	
● for status of the inputs	Yes
Potential separation	
Potential separation digital inputs	
● between the channels	Yes; Optocoupler

● between the channels, in groups of	4
Isolation	
Isolation tested with	1 500 V AC for 1 minute
EMC	
Interference immunity against discharge of static electricity	
● 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	
● Interference immunity against high-frequency radiation acc. to IEC 61000-4-3	Yes; 10 V/m, 80 to 1 000 MHz (to IEC 61000-4-3); 10 V/m, 900 MHz, 1.89 GHz, 50% ED (to IEC 61000-4-3)
— 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
Interference immunity to cable-borne interference	
● Interference immunity on supply lines acc. to IEC 61000-4-4	Yes; ±2 kV acc. to IEC 61000-4-4, burst; surge measurements with additional protective elements
● 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	
● Interference immunity on supply lines acc. to IEC 61000-4-5	Yes; Surge measurements with additional protection elements: ±1 kV (to IEC 61000-4-5; µs pulse / line to line);±2 kV (to IEC 61000-4-5; µs pulse / line to ground)
● asymmetric interference	±2 kV acc. to IEC 61000-4-5, surge asymmetric
— 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	
● Interference immunity against high frequency current feed acc. to IEC 61000-4-6	Yes; 10 V, 150 kHz to 80 MHz (to IEC 61000-4-6)
● Interference immunity against high-frequency radiation acc. to IEC 61000-4-6	Yes; 10 V/m, with 80% amplitude modulation at 1 kHz, 10 kHz to 80 MHz (acc. to IEC 61000-4-6)
— 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	
● Emission of radio interference	Interference emission to EN 50081-2, testing to EN 55011, Class A, Group 1
● Limit class A, for use in industrial areas	Yes; EN 61000-6-4, interference emission: Intended for use in industrial areas.
Degree and class of protection	
IP degree of protection	IP20
Standards, approvals, certificates	
CE mark	Yes; CE marking / EC Declaration of Conformity
Ambient conditions	
Free fall	
● Fall height, max.	0.3 m
Ambient temperature during operation	
● min.	0 °C
● max.	55 °C
● horizontal installation, min.	0 °C
● horizontal installation, max.	55 °C
● vertical installation, min.	0 °C
● vertical installation, max.	45 °C
Ambient temperature during storage/transportation	
● min.	-40 °C
● max.	70 °C
Relative humidity	
● Operation at 25 °C without condensation, max.	95 %
Dimensions	
Width	45 mm
Height	100 mm
Depth	81 mm
Weights	
Weight, approx.	176 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	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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