## SIEMENS

## Data sheet

## 6ES7288-2DE16-0AA0

Generation         SMD D146, D1 16x24 V DC           Supply voltage         Refer value (CC)           Permissible range, lower limit (CC)         24 V           permissible range, lower limit (CC)         28.8 V           Depart Current         Current for supply, voltage           Current consumption, typ.         4 mA; Current for 24 V DC from CPU module           from backplane bus 5 V DC, typ.         85 mA; For 5 V DC from CPU module           from backplane bus 5 V DC, typ.         85 mA; For 5 V DC from CPU module           Orgent answer         16 mA; For 5 V DC from CPU module           Orgent installation         4           - in groups of         4           Parallel swetching of inputs         16           - mout of 0 °C, max.         16           Monteer of simultaneous vonconcar with IEC 61131, type 1         Yes           - up to 0 °C, max.         16           Instructional installation         -           - up to 0 °C, max.         16           Instructional installation         -           - up to 0 °C, max.         16           Instructional installation         -           - up to 0 °C, max.         16           Instructional installation         -           - for signal °C, max.         00 µs     <		SIMATIC S7-200 SMART, Digital input EM DI16, 16 DI, 24V DC, Sink/Source
Supply voltage         24 V           Rade value (DC)         24 V           permissible range, lower limit (DC)         28.8 V           permissible range, lower limit (DC)         28.8 V           Current consumption, typ.         4 mX. Current for 24 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, typ.         85 mA; For 5 V DC from CPU module           from backplane bus 5 V DC, typ.         85 mA; For 5 V DC from CPU module           from backplane bus 5 V DC, typ.         85 mA; For 5 V DC from CPU module           from backplane bus 5 V DC, typ.         96 m (mogo of           4         4           Paratel switching of reputs         Yes           Input characteristic curve in accordance with IEC 61131, type 1         Yes           Number of simulaneously contrabible inputs         Yes           all mounting position         -	General information	
Rated value (DC)     24 V       permissible range, upper limit (DC)     28.8 V       Imput current	Product type designation	SM DI16, DI 16x24 V DC
permissible range, lower limit (CC)         20.4 V           permissible range, upper limit (CC)         28.8 V           Current consumption, fyp.         4 mA; Current for 24 V DC input per channel           from backplane bus 5 VDC, typ.         88 mA; For 5 V DC from CPU module           from backplane bus 5 VDC, max.         108 mA; For 5 V DC from CPU module           Digital inputs         16           • in groups of         4           Parallel switching of inputs         16           • in groups of         4           Parallel switching of inputs         16           • in groups of         4           Parallel switching of inputs         16           • Input characteristic curve in accordance with IEC 61131, type 1         Yes           Input characteristic curve in accordance with IEC 61131, type 1         Yes           Input solitage         -         16           • or pole 50°C, max.         16           horizontal installation         -         -           - up to 40°C, max.         16           Input voltage         QC         4 V           • for signal *C*          5 V DC           • for signal *C*          5 V DC           • for signal *C*          5 S MA </td <td>Supply voltage</td> <td></td>	Supply voltage	
permassible range, upper limit (DC)         28.8 V           Imput current         Current consumption, typ,         4 mA; Current for 24 V DC input per channel           Current consumption, max.         5 mA; Current for 32 V DC input per channel           from backplane bus 5 V DC, pp.         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         16           win in groups of         4           Parallel switching of Inputs         Yes           Input characteristic curve in accordance with IEC 61131, type 1         Yes           Number of simultaneously controlable inputs         16           - up to 40 °C, max.         16           horizontal installation         -           - up to 40 °C, max.         16           Number of simultaneously controlable inputs         16           - up to 40 °C, max.         16           Input voltage         DC           - up to 40 °C, max.         16           Input voltage         DC           - or po to 40 °C, max.         16           input voltage         DC           • to signal °C', max.         16           input voltage         DC           • to signal °C', max.         25	Rated value (DC)	24 V
Imput current         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           Digital inputs         105 mA; For 5 V DC from CPU module           Digital inputs         16           • in groups of         4           Parallel switching of inputs         16           • up do groups of         4           Parallel switching of inputs         Yes           Number of simultaneously controlable inputs         Yes           Number of simultaneously controlable inputs         16           • up to 40 °C, max.         16           horizontal installation	permissible range, lower limit (DC)	20.4 V
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, max.         105 mA. For 5 V DC from CPU module           Digital inputs         10           Number of digital inputs         10           Parallel subting of input per channel         Yes           Input characteristic curve in accordance with IEC 61131, type 1         Yes           Number of simultaneously controliable inputs         16           - up to 40°C, max.         16           - up to 50°C, max.         16           vertical installation         -           - up to 50°C, max.         16           Input voltage         DC           • for signal °T         < 55 DC	permissible range, upper limit (DC)	28.8 V
Current consumption, max.     5 mA; Current for 30 V DC input per channel       from backplane bus S V DC, max.     85 mA; For S V DC from CPU module       Tom backplane bus S V DC, max.     16       • in groups of     4       Parallel switching of inputs     Yes       Input characteristic curve in accordance with IEC 81131, type 1     Yes       Number of simultaneously controllable inputs     Yes       all mounting positions     16      up to 40 °C, max.     16       horizontal installation    up to 40 °C, max.      up to 40 °C, max.     16       Input statistation    up to 40 °C, max.      up to 40 °C, max.     16       Input statistation    up to 40 °C, max.       - for signal °C *     55 °C       • for signal °C *     54 V C       • for signal °C *     55 °C       • for signal °C *     20 µs       • for signal °C *     300 °C       • al °C * for °C *     500 °C	Input current	
from backplane bus 5 V DC, typ.     86 mA; For 5 V DC from CPU module       from backplane bus 5 V DC, max.     106 mA; For 5 V DC from CPU module       Optical inputs     16       • in groups of     4       Parallel switching of inputs     Yes       Input obtaracteristic curve in accordance with IEC 61131; type 1     Yes       Number of alignital machagic conclusible inputs     Yes       Input obtaracteristic curve in accordance with IEC 61131; type 1     Yes       Number of alignital machagic conclusible inputs     16       nounting positions     -       up to 40 °C, max.     16       horizontal installation     -       up to 40 °C, max.     16       Input voltage     DC       • yee of input voltage     DC       • or signal °C        • for signal °C, max.	Current consumption, typ.	4 mA; Current for 24 V DC input per channel
from backplane bus S V DC, max.       105 mA; For S V DC from CPU module         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       16         all mounting positions       -         — up to 40 °C, max.       16         horizontal installation       -         — up to 40 °C, max.       16         Input voltage       DC         • Type of input voltage       DC         • Type of input voltage       DC         • for signal °0°          • for signal °0°          • for signal °1°          • for signal °1°, max.	Current consumption, max.	5 mA; Current for 30 V DC input per channel
Digital inputs         16           Number of digital inputs         16           Parallel switching of inputs         Yes           Input characteristic curve in accordance with IEC 61131, type 1         Yes           Number of simulaneously concludate inputs         18           all mounting positions	from backplane bus 5 V DC, typ.	85 mA; For 5 V DC from CPU module
Number of digital inputs     16       • in groups of     4       Parallel structing of inputs     Yes       Input characteristic curve in accordance with IEC 61131, type 1     Yes       Number of simultaneously controllable inputs     16       all mounting positions	from backplane bus 5 V DC, max.	105 mA; For 5 V DC from CPU module
• in groups of     4       Parallel switching of inputs     Yes       Input characteristic curve in accordance with IEC 61131, typ a1     Yes       Number of simultaneously controllable inputs     I       all mouring positors     I	Digital inputs	
Parallel switching of inputs     Yes       Input characteristic curve in accordance with IEC 61131, type 1     Yes       Number of simultaneously controllable inputs     all mounting positions	Number of digital inputs	16
Input characteristic curve in accordance with IEC 61131, type 1     Yes       Number of simultaneously controllable inputs     Intervention of the second o	• in groups of	4
Number of simultaneously controllable inputs         all mounting positions        up to 40 °C, max.         16         horizontal installation        up to 50 °C, max.         16         Input voltage         0 pot 40 °C, max.         16         Input voltage         0 rule to 40 °C, max.         16         Input voltage         0 C         Rated value (PCC)         24 V         • for signal °0°         • for signal °0°         • for signal °0°, max. (permissible quiescent current)         1 mA         • for signal °1°, max.         • or signal °1°, max.         • or signal °1°, max.         • at °1° to °1°, max.	Parallel switching of inputs	Yes
ail mounting positions	Input characteristic curve in accordance with IEC 61131, type 1	Yes
up to 40°C, max.     16       horizontal instillation     -      up to 50°C, max.     16       vertical installation     -      up to 40°C, max.     16       Input voltage     DC       • Type of input voltage     DC       • Rated value (DC)     24 V       • for signal 10°     < 5 V DC	Number of simultaneously controllable inputs	
horizontal installation         -           -         up to 5°C, max.         16           vertical installation         16           Input voltage         16           Input voltage         0C           • Rated value (DC)         24 V           • for signal "0"         < 5 V DC	all mounting positions	
up to 50 °C, max.     16       vertical installation    up to 40 °C, max.       Input voltage     DC       • Type of input voltage     DC       • Rated value (DC)     24 V       • for signal °0°     < 5 V DC	— up to 40 °C, max.	16
vertical installation     16       Input voltage     DC       • Type of input voltage     DC       • Rated value (DC)     24 V       • for signal "0"     < 5 V DC	horizontal installation	
up to 40 °C, max.       16         Input voltage       DC         • Type of input voltage       DC         • Rated value (DC)       24 V         • for signal °C       < 5 V DC	— up to 50 °C, max.	16
Input voltage     DC       • Type of input voltage     DC       • Rated value (DC)     24 V       • for signal "0"     < 5 V DC	vertical installation	
• Type of input voltageDC• Rated value (DC)24 V• for signal "0"< 5 V DC	— up to 40 °C, max.	16
• Rated value (DC)       24 V         • for signal "0"       < 5 V DC	Input voltage	
• for signal "0"       < 5 V DC	<ul> <li>Type of input voltage</li> </ul>	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)       4 mA         for standard inputs       200 µs         - at "0" to "1", max.       200 µs         - at "1" to '0", max.       200 µs         Cable length       0         • shielded, max.       300 m         • unshielded, max.       300 m         • unshielded, max.       300 m         • shielded, max.       300 m         • unshielded, max.       300 m         • for status of the inputs       Yes         Potential separation       Yes	Rated value (DC)	24 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", max.       5.5 mA         • for signal "1", max.       4 mA         Input delay (for rated value of input voltage)	<ul> <li>for signal "0"</li> </ul>	< 5 V DC
• 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 mAInput delay (for rated value of input voltage)5 maxfor standard inputs200 µs- at "0" to "1", max.200 µs- at "0" to "1", max.200 µs- at "1" to "0", max.200 µsCable length500 m• shielded, max.500 m• unshielded, max.300 mDigital outputs0Cable length500 m• shielded, max.500 m• unshielded, max.500 m• shielded, max.300 mDigital outputs0Cable length100 m• for status of the inputs100 m• for status of the inputs90 m• for status of the inputs10 m• for status of the inputsYesPotential separationYes	• for signal "1"	+15 to +30 V
• 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)       5 max         for standard inputs       200 μs         - at "0" to "1", max.       200 μs         - at "1" to "0", max.       200 μs         - at "1" to "0", max.       200 μs         - at "1" to "0", max.       200 μs         Cable length       500 m         • shielded, max.       500 m         • unshielded, max.       300 m         Digital outputs       0         Cable length       0         Instielded, max.       300 m         • shielded, max.       300 m         • unshielded, max.       300 m         • unshielded, max.       300 m         • unshielded, max.       300 m         Interrupts/diagnostics/status information       Interrupts/diagnostics/status information         Diagnostics indication LED       Yes         Potential separation       Yes	Input current	
• for signal "1", max.5.5 mA• for signal "1", typ.4 mAInput delay (for rated value of input voltage)for standard inputs- at "0" to "1", max.200 μs- at "1" to "0", max.200 μsCable length500 m• shielded, max.500 m• unshielded, max.300 mDigital outputsNumber of digital outputs0Cable length500 m• shielded, max.300 mInput digital outputs0Cable length500 m• shielded, max.300 mDigital outputs0Cable length500 m• shielded, max.500 m• shielded, max.500 m• shielded, max.500 m• shielded, max.300 m• shielded, max.500 m• or status informationInterrupts/diagnostics/status informationPotential separation LEDYesPotential separation digital inputsYes	<ul> <li>for signal "0", max. (permissible quiescent current)</li> </ul>	1 mA
• for signal "1", typ.       4 mA         Input delay (for rated value of input voltage)       -         for standard inputs       200 μs         - 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       0         Cable length       -         • shielded, max.       300 m         Digital outputs       0         Cable length       -         • shielded, max.       300 m         Digital outputs       0         Cable length       -         • shielded, max.       300 m         Interrupts/diagnostics/status information       -         Diagnostics indication LED       -         • for status of the inputs       Yes         Potential separation       -         Potential separation digital inputs       -	● for signal "1", min.	2.5 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	● for signal "1", max.	5.5 mA
for standard inputs	● for signal "1", typ.	4 mA
at "0" to "1", max.200 μs at "1" to "0", max.200 μsCable length200 μs at max.500 m unshielded, max.500 m unshielded, max.300 mDigital outputsNumber of digital outputs0Cable length	Input delay (for rated value of input voltage)	
	for standard inputs	
Cable length         • shielded, max.       500 m         • unshielded, max.       300 m         Digital outputs         Number of digital outputs       0         Cable length       0         • shielded, max.       500 m         • shielded, max.       500 m         • unshielded, 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	— at "0" to "1", max.	200 µs
• shielded, max.500 m• unshielded, max.300 mDigital outputsNumber of digital outputs0Cable length0• shielded, max.500 m• unshielded, max.300 mInterrupts/diagnostics/status information300 mDiagnostics indication LED• for status of the inputsYesPotential separationPotential separation digital inputs	— at "1" to "0", max.	200 µs
• unshielded, max.300 mDigital outputsNumber of digital outputs0Cable length0• shielded, max.500 m• unshielded, max.300 mInterrupts/diagnostics/status information1Diagnostics indication LED• for status of the inputs• for status of the inputsYesPotential separation1Potential separation digital inputs1	Cable length	
Digital outputs       0         Number of digital outputs       0         Cable length       500 m         • shielded, max.       500 m         • unshielded, max.       300 m         Interrupts/diagnostics/status information       Joingnostics indication LED         • for status of the inputs       Yes         Potential separation       Potential separation digital inputs	<ul> <li>shielded, max.</li> </ul>	500 m
Number of digital outputs       0         Cable length       •         • shielded, max.       500 m         • unshielded, max.       300 m         Interrupts/diagnostics/status information       Interrupts/diagnostics/status information         Diagnostics indication LED       •         • for status of the inputs       Yes         Potential separation       Potential separation digital inputs	• unshielded, max.	300 m
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	Digital outputs	
• 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	Number of digital outputs	0
• unshielded, max.     300 m       Interrupts/diagnostics/status information       Diagnostics indication LED       • for status of the inputs       Yes       Potential separation       Potential separation digital inputs	Cable length	
Interrupts/diagnostics/status information         Diagnostics indication LED         • for status of the inputs       Yes         Potential separation         Potential separation digital inputs	• shielded, max.	500 m
Diagnostics indication LED       • for status of the inputs       Yes       Potential separation       Potential separation digital inputs	• unshielded, max.	300 m
for status of the inputs     Yes  Potential separation  Potential separation digital inputs	Interrupts/diagnostics/status information	
Potential separation Potential separation digital inputs	Diagnostics indication LED	
Potential separation digital inputs	<ul> <li>for status of the inputs</li> </ul>	Yes
	Potential separation	
between the channels     Yes; Optocoupler	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				
<ul> <li>Test voltage at contact discharge</li> </ul>	4 kV				
Interference immunity against high-frequency electromagnetic field	ls				
<ul> <li>Interference immunity against high-frequency radiation acc. to IEC 61000-4-3</li> </ul>	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)				
<ul> <li>Frequency range of the RF radiation</li> </ul>	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					
<ul> <li>Interference immunity on supply lines acc. to IEC 61000- 4-4</li> </ul>	Yes; $\pm 2 \text{ kV}$ acc. to IEC 61000-4-4, burst; surge measurements with additional protective elements				
<ul> <li>Interference immunity on signal cables acc. to IEC 61000- 4-4</li> </ul>	Yes; ±2 kV acc. to IEC 61000-4	I-4, Burst			
Interference immunity against voltage surge					
<ul> <li>Interference immunity on supply lines acc. to IEC 61000- 4-5</li> </ul>	Yes; Surge measurements with additional protection elements: $\pm 1$ kV (to IEC 61000-4-5; $\mu$ s pulse / line to line); $\pm 2$ kV (to IEC 61000-4-5; $\mu$ s pulse / line to ground)				
asymmetric interference	±2 kV acc. to IEC 61000-4-5, s	urge asymmetric			
Interference immunity against conducted variable disturbance indu	iced by high-frequency fields				
<ul> <li>Interference immunity against high frequency current feed acc. to IEC 61000-4-6</li> </ul>	Yes; 10 V, 150 kHz to 80 MHz (to IEC 61000-4-6)				
<ul> <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, 10 kHz to 80 MHz (acc. to IEC 61000-4-6)				
<ul> <li>— Test voltage at 80% amplitude modulation with 1kHz in the range 9 kHz to 80 MHz</li> </ul>	10 V				
Emission of radio interference acc. to EN 55 011					
<ul> <li>Emission of radio interference</li> </ul>	Interference emission to EN 50081-2, testing to EN 55011, Class A, Group 1				
<ul> <li>Limit class A, for use in industrial areas</li> </ul>	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 Declarat	ion of Conformity			
Ambient conditions					
Free fall					
<ul> <li>Fall height, max.</li> </ul>	0.3 m				
Ambient temperature during operation					
• min.	0 °C				
• max.	55 °C				
<ul> <li>horizontal installation, min.</li> </ul>	0°C				
<ul> <li>horizontal installation, max.</li> </ul>	55 °C				
vertical installation, min.			0 °C		
• vertical installation, max.	45 °C				
Ambient temperature during storage/transportation					
	10.00				
• min.	-40 °C				
• min. • max.	-40 °C 70 °C				
• min.	70 °C				
• min. • max.					
<ul> <li>min.</li> <li>max.</li> <li>Relative humidity</li> <li>Operation at 25 °C without condensation, max.</li> </ul>	70 °C				
<ul> <li>min.</li> <li>max.</li> <li>Relative humidity</li> <li>Operation at 25 °C without condensation, max.</li> </ul>	70 °C				
min.     max. Relative humidity     Operation at 25 °C without condensation, max. Dimensions	70 °C 95 %				
min.     max. Relative humidity     Operation at 25 °C without condensation, max. Dimensions Width	70 °C 95 % 45 mm				
min.     max. Relative humidity     Operation at 25 °C without condensation, max. Dimensions Width Height Depth	70 °C 95 % 45 mm 100 mm				
min.     max. Relative humidity     Operation at 25 °C without condensation, max. Dimensions Width Height Depth Weights	70 °C 95 % 45 mm 100 mm 81 mm				
min.     max. Relative humidity     Operation at 25 °C without condensation, max. Dimensions Width Height Depth Weights Weights Weight, approx.	70 °C 95 % 45 mm 100 mm				
min.     max. Relative humidity     Operation at 25 °C without condensation, max. Dimensions Width Height Depth Weights	70 °C 95 % 45 mm 100 mm 81 mm				
min.     max. Relative humidity     Operation at 25 °C without condensation, max. Dimensions Width Height Depth Weights Weight, approx.	70 °C 95 % 45 mm 100 mm 81 mm	Version	Classification		
min.     max. Relative humidity     Operation at 25 °C without condensation, max. Dimensions Width Height Depth Weights Weight, approx.	70 °C 95 % 45 mm 100 mm 81 mm	Version 14	Classification 27-24-22-04		

Subject to change without notice © Copyright Siemens

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



last modified:

12/8/2024 🖸