# SIEMENS

#### Data sheet

### 6ES7222-1BF22-0XA0



\*\*\*Spare part\*\*\* SIMATIC S7-200, Digital output EM 222, only for S7-22X CPU, 8 DO, 24 V DC

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Supply voltage	
Load voltage L+	
Rated value (DC)	24 V
<ul> <li>permissible range, lower limit (DC)</li> </ul>	20.4 V
<ul> <li>permissible range, upper limit (DC)</li> </ul>	28.8 V
Input current	
from backplane bus 5 V DC, max.	50 mA
Power loss	
Power loss, typ.	2 W
Digital outputs	
Number of digital outputs	8
Short-circuit protection	No
Limitation of inductive shutdown voltage to	L+ (-48 V)
Output voltage	
<ul> <li>for signal "1", min.</li> </ul>	20 V
Output current	
<ul> <li>for signal "1" rated value</li> </ul>	0.75 A
<ul> <li>for signal "1" permissible range for 0 to 55 °C, max.</li> </ul>	750 mA
<ul> <li>for signal "0" residual current, max.</li> </ul>	10 µA
Parallel switching of two outputs	
<ul> <li>for uprating</li> </ul>	Yes
Total current of the outputs (per group)	
all mounting positions	
— up to 40 °C, max.	3 A
<ul> <li>Current per conductor/group, max.</li> </ul>	3 A
horizontal installation	
— up to 55 °C, max.	3 A
Relay outputs	
Switching capacity of contacts	
— with inductive load, max.	0.75 A
— on lamp load, max.	5 W
— with resistive load, max.	0.75 A
Cable length	
<ul> <li>shielded, max.</li> </ul>	500 m
<ul> <li>unshielded, max.</li> </ul>	150 m
Potential separation	
Potential separation digital outputs	
<ul> <li>Potential separation digital outputs</li> </ul>	Yes; Optocoupler
<ul> <li>between the channels, in groups of</li> </ul>	4

Isolation		
Isolation tested with	500 V AC	
connection method		
Plug-in I/O terminals	Yes	
Dimensions		
Width	45 mm	
Height	80 mm	
Depth	62 mm	
Weights		
Weight, approx.	150 g	

last modified:

8/23/2023 🖸

# SIEMENS

#### Data sheet

### 6ES7222-1BD22-0XA0



\*\*\* spare part \*\*\* SIMATIC S7-200, digital output EM 222, only for S7-22X CPU, 4 DQ, 4-24 V DC; 5 A/channel source

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Supply voltage           Lada voltage 1.+           • Rated value (DC)         24 V           • permissible range, lover limit (DC)         28.8 V           Input current         Input current           from backplane bus 5 V DC, max.         40 mA           Power loss         Power loss           Power loss         1           Power loss         4           Short-circuit protection         No           Limitation of inductive shutdown voltage to         Let (48 V)           Output voltage         -           • for signal "1", min.         20 V DC           Output voltage         -           • for signal "1" rated value         5 A           • fore		
Rated value (DC)     24 V     eprmissible range, lower limit (DC)     20.4 V     eprmissible range, upper limit (DC)     28.8 V     Input current     from backplane bus 5 V DC, max.     40 mA     Power loss     Power loss, typ.     Output summer     Number of digital outputs     Input current     Intraction of inductive shutdown voltage to     Limitation of inductive shutdown voltage to     If or signal "1" rinin.     20 V DC     Output current     for signal "1" rinin.         20 V DC     Output current         for signal "1" romas.         SA         for signal "1         for signal "1" romas.         sA	Supply voltage	
• permissible range, lower limit (DC) 20.4 V     • permissible range, upper limit (DC) 28.8 V      post current      form backglane bus 5 V DC, max. 40 mA      Power loss, typ. 3 W     Digital outputs      Power loss, typ. 40 mA      Power loss, typ. 0 V     Unitation of Inductive shutdown voltage to     L+ (-48 V)     Output voltage     • for signal *1*, min. 20 V DC     Output voltage     • for signal *1*, min. 20 V DC     Output voltage     • for signal *1* rede value     • for signal *1* remissible range for 0 to 55 *C, max. 5 A     • for signal *1* rede value     • for signal *1* remissible range for 0 to 55 *C, max. 5 A     • for signal *1* remissible range for 0 to 55 *C, max. 5 A     • for signal *1* remissible range for 0 to 55 *C, max. 5 A     • for signal *1* remissible range for 0 to 55 *C, max. 5 A     • for signal *1* remissible range for 0 to 55 *C, max. 5 A     • for signal *1* remissible range for 0 to 55 *C, max. 5 A     • for signal *1* remissible range for 0 to 55 *C, max. 5 A     • for signal *1* remissible range for 0 to 55 *C, max. 5 A     • for signal *1* remissible range for 0 to 55 *C, max. 5 A     • for signal *1* remissible range for 0 to 55 *C, max. 5 A     • or signal remote		
• permissible range, upper limit (DC)         28.8 V           Input current         40           from backplane bus 5 V DC, max.         40 MA           Power loss, typ.         3 W           Digital outputs         4           Short-circuit protection         No           Limitation of inductive shutdown voltage to         L+ (48 V)           Output voltage         •           • for signal "1", min.         20 V DC           Output voltage         •           • for signal "1", min.         20 V DC           Output voltage         •           • for signal "1" penissible range for 0 to 55 °C, max.         5 A           • for signal "1" penissible range for 0 to 55 °C, max.         30 µA           Total current of the outputs (per group)         all mounting positions           up to 40 °C, max.         20 A           - Current per conductor/group, max.         5 A           Notizontal installation         -           up to 55 °C, max.         20 A           Relay outputs         5 A           - on ismp load, max.         5 A           - on ismp load, max.         5 A           - on ismp load, max.         500 m           - with inductive load, max.         500 m		
Input current         40 mA           Power loss         Power loss, typ.           Power loss, typ.         3 W           Digital outputs         4           Short-circuit protection         No           Limitation of inductive shutdown voltage to         L+ (-48 V)           Output voltage         0 V DC           Output voltage         5 A           • for signal "1" min.         20 V DC           Output voltage         5 A           • for signal "1" rated value         5 A           • for signal "1" rate value         5 A           • or signal "1" rate value         5 A           • or signal "1" rated value         5 A           • or signal "1" rate value         5 A           • or signal "1" rated value         5 A           • or signal "1" rate value         20 A           Catacurent of the outputs (per group)         5 A           • up to 5 10, max.		
from backplane bus 5 V DC, max.     40 mA       Power loss.     3 W       Power loss, typ.     3 W       Digital outputs     4       Number of digital outputs     4       Short-circuit protection     No       Limitation of inductive shutdown voltage to     L + (48 V)       Output voltage     • (or signal "1", min.       • (or signal "1" rated value     5 A       • orent per conductorigroup, max.     5 A       • horizontal installation     - up to 55 °C, max.       • up to 5 °C, max.     5 A		28.8 V
Power loss         Power loss, typ.       3 W         Digital outputs       4         Short-circuit protection       No         Limitation of inductive shutdown voltage to       L+ (-48 V)         Output voltage       •         • for signal *1*, min.       20 V DC         Output current       •         • for signal *1* reated value       5 A         • for signal *1* reated value       5 A         • for signal *10* residual current, max.       30 µA         Total current of the outputs (per group)       all mounting positions         - up to 40 °C, max.       20 A         - Current per conductor/group, max.       5 A         horizontal installation       -         - up to 55 °C, max.       20 A         Relay outputs       Sa         Switching capacity of contacts       -         - with inductive load, max.       5 A         - on lamp load, max.       5 A         - on lamp load, max.       5 A         • or shielded, max.       5 A         • or there is the load, max.       5 A         •	Input current	
Power loss, typ.     3 W       Digital outputs     4       Number of digital outputs     4       Short-circuit protection     No       Limitation of inductive shutdown voltage to     L+ (48 V)       Output voltage     • for signal "1", min.       20 V DC     Output current       • for signal "1" permissible range for 0 to 55 "C, max.     5 A       • for signal "1" permissible range for 0 to 55 "C, max.     5 A       • for signal "1" residual current, max.     30 µA       Total current of the outputs (per group)     all mounting positions       - up to 40 "C, max.     20 A       - Current per conductor/group, max.     5 A       whinic installation     -       - up to 55 "C, max.     20 A       Relay outputs     Switching capacity of contacts       - with inductive load, max.     5 A       - on lamp load, max.     5 A       - shielded, max.     500 m       - with resistive load, max.     5 A       - Shielded, max.     500 m       - unshielded, max.     500 m       - Potential separation digital outputs     Yes       • Detential separation digital out	from backplane bus 5 V DC, max.	40 mA
Digital outputs       4         Short-circuit protection       No         Limitation of inductive shutdown voltage to       L+ (48 V)         Output voltage       • for signal 1*, min.         • for signal 1*, min.       20 V DC         Output current       • for signal 1*, mem.         • for signal 1*, mem.sible range for 0 to 55 °C, max.       5 A         • for signal 1*, permissible range for 0 to 55 °C, max.       5 A         • for signal 1*, residual current, max.       30 µA         Total current of the outputs (per group)       •         all mounting positions       •         - up to 40 °C, max.       20 A         - Current per conductor/group, max.       5 A         horizontal installation       •         - up to 40 °C, max.       20 A         Relay outputs       Switching capacity of contacts         - with inductive load, max.       5 A         - on lamp load, max.       5 A         - on lamp load, max.       5 A         Cable length       •         • bileided, max.       500 m         • unshielded, max.       500 m         • bileided, max.       500 m         • outshielded, max.       500 m         • Dotential separation digital outputs	Power loss	
Number of digital outputs     4       Short-circuit protection     No       Limitation of inductive shutdown voltage to     L+ (-48 V)       Output voltage     •       • for signal "1", min.     20 V DC       Output current     5 A       • for signal "1" rated value     5 A       • for signal "1" retidual current, max.     30 µA       Total current of the outputs (per group)     all mounting positions       - up to 40 °C, max.     20 A       - Current per conductor/group, max.     5 A       horizontal installation     -       - up to 55 °C, max.     20 A       Relay outputs     5 A       - with inductive load, max.     5 A       - on lamp load, max.     5 A       - with inductive load, max.     5 A       - on lamp load, max.     5 A       - on lamp load, max.     5 A       - on lamp load, max.     5 A       Cable length     -       • shielded, max.     150 m       Potential separation     -       Potential separation digital outputs     Yes       • between the channels, in groups of     1	Power loss, typ.	3 W
Short-circuit protection       No         Limitation of inductive shutdown voltage to       L+ (-48 V)         Output voltage       •         • for signal "1", min.       20 V DC         Output contrage       •         • for signal "1" rated value       5 A         • for signal "1" repersisable range for 0 to 55 °C, max.       5 A         • for signal "1" repersisable range for 0 to 55 °C, max.       5 A         • for signal "1" repersive value       5 A         • of resignal "1" repersive value       5 A         • of resignal "1" repersive value       5 A         • of repersive value       20 A         — up to 40 °C, max.       20 A         — our to be 5°C, max.       20 A         Relay outputs       Switching capacity of contacts         — with inductive load, max.       5 A         — on lamp load, max.       5 A         • our thir resitive load, max.       5 A         • cable length       • shielded, max.         • shielded	Digital outputs	
Limitation of inductive shutdown voltage to Limitation of inductive shutdown voltage to of or signal "1", min. 20 V DC Output current of or signal "1" read value 5 A of or signal "1" permissible range for 0 to 55 °C, max. 5 A of or signal "0" residual current, max. 30 µA Total current of the outputs (per group) all mounting positions — up to 40 °C, max. 20 A — Current per conductor/group, max. 5 A horizontal installation — up to 50 °C, max. 20 A Relay outputs Switching capacity of contacts — with inductive load, max. 5 A — on lamp load, max. 5 A Cable length — shielded, max. 500 m — unshielded, max. 150 m Potential separation digital outputs Potential separation digital outputs Potenti	Number of digital outputs	4
Output voltage         • for signal "1", min.       20 V DC         Output current       5 A         • for signal "1" rated value       5 A         • for signal "1" permissible range for 0 to 55 °C, max.       5 A         • for signal "0" residual current, max.       30 µA         Total current of the outputs (per group)       all mounting positions         - up to 40 °C, max.       20 A         - Current per conductor/group, max.       5 A         horizontal installation       -         - up to 55 °C, max.       20 A         Relay outputs       Switching capacity of contacts         - with inductive load, max.       5 A         - on lamp load, max.       5 A         - with resistive load, max.       5 A         - with separation digital outputs       5 A         Output bed, max.       5 A         - on lamp load, max.       5 A         - on lamp load, max.       5 A         Cable length       -         • shielided, max.       500 m         • unshielided, max.       150 m         Potential separation digital outputs       Yes         • between the channels, in groups of       1         Isolation       1	Short-circuit protection	No
• for signal "1", min.       20 V DC         Output current       5 A         • for signal "1" rated value       5 A         • for signal "1" permissible range for 0 to 55 °C, max.       5 A         • for signal "0" residual current, max.       30 µA         Total current of the outputs (per group)       all mounting positions         - up to 40 °C, max.       20 A         - Current per conductor/group, max.       5 A         horizontal installation       -         - up to 55 °C, max.       20 A         Relay outputs       20 A         Switching capacity of contacts       -         - on lamp load, max.       5 A         - with inductive load, max.       5 A         - with resistive load, max.       5 A         - with resistive load, max.       5 A         - with resistive load, max.       5 OW         - with resistive load, max.       50 W         - with resistive load, max.       500 m         - with resistive load, max.       150 m         Potential separation       Folential separation digital outputs         • Potential separation digital outputs       Yes         • between the channels, in groups of       1         Isolation       Yes	Limitation of inductive shutdown voltage to	L+ (-48 V)
Output current       5 A         • for signal "1" rated value       5 A         • for signal "1" permissible range for 0 to 55 °C, max.       5 A         • for signal "0" residual current, max.       30 µA         Total current of the outputs (per group)       all mounting positions         - up to 40 °C, max.       20 A         - Current per conductor/group, max.       5 A         horizontal installation       - up to 55 °C, max.         - up to 55 °C, max.       20 A         Relay outputs       20 A         Switching capacity of contacts       - on lamp load, max.         - on lamp load, max.       5 A         - with inductive load, max.       5 A         - with resistive load, max.       5 A         - with resistive load, max.       5 A         - on lamp load, max.       5 OW         - with resistive load, max.       5 A         Otable length       - shielded, max.         • shielded, max.       150 m         Potential separation digital outputs       Yes         • between the channels, in groups of       1         Isolation       1	Output voltage	
<ul> <li>for signal "1" rated value</li> <li>5 A</li> <li>for signal "1" permissible range for 0 to 55 °C, max.</li> <li>5 A</li> <li>for signal "0" residual current, max.</li> <li>30 µA</li> <li>Total current of the outputs (per group)</li> <li>all mounting positions         <ul> <li>up to 40 °C, max.</li> <li>20 A</li> <li>Current per conductor/group, max.</li> <li>A</li> </ul> </li> <li>nup to 55 °C, max.</li> <li>20 A</li> <li>Current per conductor/group, max.</li> <li>5 A</li> <li>horizontal installation         <ul> <li>up to 55 °C, max.</li> <li>20 A</li> </ul> </li> <li>Relay outputs</li> <li>Switching capacity of contacts         <ul> <li>with inductive load, max.</li> <li>A</li> <li>on lamp load, max.</li> <li>SO W</li> <li>with resistive load, max.</li> <li>So W</li> <li>with resistive load, max.</li> <li>So O M</li> <li>unshielded, max.</li> <li>So O m</li> <li>unshielded, max.</li> <li>to m</li> </ul> </li> <li>Potential separation digital outputs</li> <li>Potential separation digital outputs</li> <li>Yes</li> <li>between the channels, in groups of</li> <li>tolation</li> </ul>	<ul> <li>for signal "1", min.</li> </ul>	20 V DC
• for signal "1" permissible range for 0 to 55 °C, max.       5 A         • for signal "0" residual current, max.       30 μA         Total current of the outputs (per group)         all mounting positions       -         - up to 40 °C, max.       20 A         - Current per conductor/group, max.       5 A         horizontal installation       -         - up to 55 °C, max.       20 A         Relay outputs       20 A         Switching capacity of contacts       -         - with inductive load, max.       5 A         - on lamp load, max.       50 W         - with resistive load, max.       5 A         Cable length       -         • shielded, max.       500 m         • unshielded, max.       150 m         Potential separation digital outputs       Yes         • Potential separation digital outputs       Yes         • between the channels, in groups of       1	Output current	
• for signal "0" residual current, max.       30 μA         Total current of the outputs (per group)         all mounting positions         - up to 40 °C, max.       20 A         - Current per conductor/group, max.       5 A         horizontal installation       20 A         - up to 55 °C, max.       20 A         Relay outputs       20 A         Switching capacity of contacts       20 A         - with inductive load, max.       5 A         - on lamp load, max.       50 W         - with resistive load, max.       5 A         Shielded, max.       500 M         - unshielded, max.       500 m         • between the channels, in groups of       1	<ul> <li>for signal "1" rated value</li> </ul>	5 A
Total current of the outputs (per group)         all mounting positions         up to 40 °C, max.         - Current per conductor/group, max.         5 A         horizontal installation         up to 55 °C, max.         20 A         Relay outputs         Switching capacity of contacts         with inductive load, max.         5 A         - on lamp load, max.         5 A         Cable length         • shielded, max.         • unshielded, max.         500 m         • unshielded, max.         500 m         • Dotential separation digital outputs         Potential separation digital outputs         • Potential separation digital outputs         • Potential separation digital outputs         • Solation	<ul> <li>for signal "1" permissible range for 0 to 55 °C, max.</li> </ul>	5 A
all mounting positions       20 A         - up to 40 °C, max.       20 A         - Current per conductor/group, max.       5 A         horizontal installation       20 A         - up to 55 °C, max.       20 A         Relay outputs       20 A         Switching capacity of contacts       20 A         - with inductive load, max.       5 A         - on lamp load, max.       50 W         - with resistive load, max.       5 A         Cable length       5 A         • shielded, max.       500 m         • unshielded, max.       500 m         • unshielded, max.       500 m         • bielded, max.       500 m         • bielded, max.       500 m         • unshielded, max.       500 m         • bielded, max.       500 m         • bielded, max.       500 m         • bielded, max.       500 m         • unshielded, max.       500 m         • bielded, max.       500 m         • Dotential separation digital outputs       Yes         • Potential separation digital outputs       Yes         • between the channels, in groups of       1         Isolation       1	<ul> <li>for signal "0" residual current, max.</li> </ul>	30 µA
up to 40 °C, max.       20 A        Current per conductor/group, max.       5 A         horizontal installation       20 A        up to 55 °C, max.       20 A         Relay outputs       5 A         Switching capacity of contacts       -        with inductive load, max.       5 A        on lamp load, max.       50 W        with resistive load, max.       5 A         Cable length       5 A         • shielded, max.       500 m         • unshielded, max.       500 m         • unshielded, max.       150 m         Potential separation digital outputs       Yes         • Potential separation digital outputs       Yes         • between the channels, in groups of       1         Isolation       1	Total current of the outputs (per group)	
- Current per conductor/group, max.       5 A         horizontal installation       20 A         - up to 55 °C, max.       20 A         Relay outputs       5         Switching capacity of contacts       -         - with inductive load, max.       5 A         - on lamp load, max.       50 W         - with resistive load, max.       5 A         - with resistive load, max.       5 M         - with resistive load, max.       50 W         - with resistive load, max.       500 m         - with resistive load, max.       500 m         - with inductive load, max.       500 m         - bihielded, max.       150 m         Potential separation       Yes         - Potential separation digital outputs       Yes         - Potential separation digital outputs       Yes         - between the channels, in groups of       1         Isolation       1	all mounting positions	
horizontal installation       - up to 55 °C, max.       20 A         Relay outputs       -       Switching capacity of contacts	— up to 40 °C, max.	20 A
	<ul> <li>— Current per conductor/group, max.</li> </ul>	5 A
Relay outputs         Switching capacity of contacts         - with inductive load, max.       5 A         - on lamp load, max.       50 W         - with resistive load, max.       5 A         Cable length       5 A         • shielded, max.       500 m         • unshielded, max.       500 m         • unshielded, max.       500 m         • unshielded, max.       150 m         Potential separation       150 m         Potential separation digital outputs       Yes         • between the channels, in groups of       1         Isolation       1	horizontal installation	
Switching capacity of contacts         with inductive load, max.       5 A         - on lamp load, max.       50 W         with resistive load, max.       5 A         Cable length       5 A         • shielded, max.       500 m         • unshielded, max.       500 m         • unshielded, max.       500 m         • Unshielded, max.       150 m         Potential separation       Potential separation digital outputs         • Potential separation digital outputs       Yes         • between the channels, in groups of       1         Isolation       1	— up to 55 °C, max.	20 A
with inductive load, max.       5 A         on lamp load, max.       50 W         with resistive load, max.       5 A         Cable length       5 A         • shielded, max.       500 m         • unshielded, max.       500 m         • unshielded, max.       150 m         Potential separation       150 m         Potential separation digital outputs       Yes         • between the channels, in groups of       1         Isolation       1	Relay outputs	
on lamp load, max.       50 W         with resistive load, max.       5 A         Cable length       500 m         • shielded, max.       500 m         • unshielded, max.       150 m         Potential separation         Potential separation digital outputs         • Potential separation digital outputs       Yes         • between the channels, in groups of       1         Isolation	Switching capacity of contacts	
- with resistive load, max.       5 A         Cable length       500 m         • shielded, max.       500 m         • unshielded, max.       150 m         Potential separation       150 m         Potential separation digital outputs       90 m         • Potential separation digital outputs       100 m         • Detential separation digital outputs       100 m	— with inductive load, max.	5 A
Cable length         • shielded, max.       500 m         • unshielded, max.       150 m         Potential separation       150 m         Potential separation digital outputs       Yes         • between the channels, in groups of       1         Isolation       1	— on lamp load, max.	50 W
• shielded, max.       500 m         • unshielded, max.       150 m         Potential separation       150 m         Potential separation digital outputs       • Potential separation digital outputs         • Potential separation digital outputs       Yes         • between the channels, in groups of       1         Isolation       1	— with resistive load, max.	5 A
• unshielded, max.     150 m       Potential separation     Potential separation digital outputs       • Potential separation digital outputs     Yes       • between the channels, in groups of     1       Isolation     Isolation	Cable length	
Potential separation         Potential separation digital outputs         • Potential separation digital outputs         • between the channels, in groups of         1         Isolation	<ul> <li>shielded, max.</li> </ul>	500 m
Potential separation digital outputs       Yes         • Potential separation digital outputs       Yes         • between the channels, in groups of       1         Isolation       1	• unshielded, max.	150 m
Potential separation digital outputs Yes     between the channels, in groups of 1  Isolation	Potential separation	
between the channels, in groups of     I Isolation	Potential separation digital outputs	
Isolation	<ul> <li>Potential separation digital outputs</li> </ul>	Yes
	<ul> <li>between the channels, in groups of</li> </ul>	1
Isolation tested with 500 V AC	Isolation	
	Isolation tested with	500 V AC

connection method		
Plug-in I/O terminals	Yes	
Dimensions		
Width	45 mm	
Height	80 mm	
Depth	62 mm	
Weights		
Weight, approx.	120 g	

last modified:

8/23/2023 🖸