Data sheet

6ES7222-1HH32-0XB0

SIMATIC S7-1200, DIGITAL OUTPUT SM 1222, 16 DO, RELAY 2A



Supply voltage		
permissible range, lower limit (DC)	20.4 V	
permissible range, upper limit (DC)	28.8 V	
Input current		
from backplane bus 5 V DC, max.	135 mA	
Digital outputs		
from load voltage L+, max.	11 mA/relay coil	
Power loss		
Power loss, typ.	8.5 W	
Digital outputs		
Number of digital outputs	16	
• in groups of	1	
Short-circuit protection	No; to be provided externally	
Switching capacity of the outputs		
• with resistive load, max.	2 A	
• on lamp load, max.	30 W with DC, 200 W with AC	
Output voltage		

• Rated value (AC) Output current • for signal "1" permissible range, max. Output delay with resistive load • "0" to "1", max. • "1" to "0", max. Total current of the outputs (per group) horizontal installation — up to 50 °C, max. Relay outputs • Number of operating cycles, max. Switching capacity of contacts — with inductive load, max. — on lamp load, max. — on lamp load, max. — with resistive load, max. 2 A Cable length • shielded, max. • unshielded, max. • unshielded, max. • Diagnostic alarm Potential separation Potential separation Potential separation Potential separation digital outputs • between the channels • between the channels • between the channels and backplane bus Permissible potential difference between different circuits 750 V AC for 1 minute	• Rated value (DC)	5 V DC to 30 V DC
for signal "1" permissible range, max.	• Rated value (AC)	5 V AC to 250 V AC
Output delay with resistive load • "0" to "1", max. • "1" to "0", max. 10 ms 10 ms Total current of the outputs (per group) horizontal installation — up to 50 °C, max. Relay outputs • Number of relay outputs • Number of operating cycles, max. Switching capacity of contacts — with inductive load, max. — on lamp load, max. — with resistive load, max. — with resistive load, max. 150 m Cable length • shielded, max. • unshielded, max. • Diagnostic alarm • Diagnostic clarm • Diagnostic clarm Potential separation Potential separation Potential separation digital outputs • between the channels in groups of • between the channels and backplane bus Permissible potential difference	Output current	
"0" to "1", max. "1" to "0", max. 10 ms Total current of the outputs (per group) horizontal installation — up to 50 °C, max. Relay outputs Number of relay outputs Number of operating cycles, max. Retad supply voltage of relay coil L+ (DC) Number of operating cycles, max. with inductive load, max. — on lamp load, max. — with resistive load, max. — with resistive load, max. 150 m Cable length Shielded, max. unshielded, max. 150 m Interrupts/diagnostics/status information Alarms Diagnostic alarm Potential separation Potential separation Potential separation digital outputs Belays between the channels, in groups of between the channels and backplane bus Permissible potential difference	• for signal "1" permissible range, max.	2 A
""" to "0", max. Total current of the outputs (per group) horizontal installation — up to 50 °C, max. Relay outputs Number of relay outputs Number of operating cycles, max. Number of operating cycles, max. with inductive load, max. — with inductive load, max. — on lamp load, max. — with resistive load, max. — with resistive load, max. — with resistive load, max. 1500 m Interrupts/diagnostics/status information Alarms Diagnostic alarm Potential separation Potential separation Potential separation Potential separation groups of between the channels and backplane bus Permissible potential difference	Output delay with resistive load	
Total current of the outputs (per group) horizontal installation — up to 50 °C, max. Relay outputs • Number of relay outputs • Rated supply voltage of relay coil L+ (DC) • Number of operating cycles, max. mechanically 10 million, at rated load voltage 100 000 Switching capacity of contacts — with inductive load, max. — on lamp load, max. — with resistive load, max. — with resistive load, max. 1500 m Interrupts/diagnostics/status information Alarms • Diagnostic alarm Potential separation Potential separation Potential separation groups of • between the channels and backplane bus Permissible potential difference	• "0" to "1", max.	10 ms
horizontal installation — up to 50 °C, max. Relay outputs • Number of relay outputs • Rated supply voltage of relay coil L+ (DC) • Number of operating cycles, max. Switching capacity of contacts — with inductive load, max. — on lamp load, max. — on lamp load, max. — with resistive load, max. 2 A Cable length • shielded, max. • unshielded, max. • Diagnostics/status information Alarms • Diagnostic alarm Potential separation Potential separation Potential separation digital outputs • between the channels, in groups of • between the channels, in groups of • between the channels and backplane bus Permissible potential difference	• "1" to "0", max.	10 ms
Relay outputs • Number of relay outputs • Number of relay outputs • Rated supply voltage of relay coil L+ (DC) • Number of operating cycles, max. Number of operating cycles, max. Switching capacity of contacts — with inductive load, max. — on lamp load, max. — with resistive load, max. — with resistive load, max. — with resistive load, max. — b shielded, max. • unshielded, max. • unshielded, max. • Diagnostics/status information Alarms • Diagnostic alarm Potential separation Potential separation Potential separation digital outputs • between the channels, in groups of • between the channels and backplane bus Permissible potential difference	Total current of the outputs (per group)	
Relay outputs Number of relay outputs Rated supply voltage of relay coil L+ (DC) Number of operating cycles, max. mechanically 10 million, at rated load voltage 100 000 Switching capacity of contacts with inductive load, max. 2 A on lamp load, max. 30 W with DC, 200 W with AC with resistive load, max. 2 A Cable length shielded, max. 500 m unshielded, max. 150 m Interrupts/diagnostics/status information Alarms Diagnostics indication LED of or status of the outputs Potential separation Potential separation Potential separation digital outputs between the channels, in groups of 4 obetween the channels, in groups of 4 obetween the channels and backplane bus Permissible potential difference	horizontal installation	
Number of relay outputs Rated supply voltage of relay coil L+ (DC) Number of operating cycles, max. Number of operating cycles, max. Witching capacity of contacts - with inductive load, max on lamp load, max with resistive load, max. - with resistive load, max with resistive load, max. - b shielded, max. - shielded, max unshielded, max. - unshielded, max. - 150 m Interrupts/diagnostics/status information Alarms - Diagnostics indication LED - for status of the outputs Yes Potential separation Potential separation digital outputs - between the channels - between the channels, in groups of - between the channels and backplane bus Permissible potential difference	— up to 50 °C, max.	10 A; Current per mass
Rated supply voltage of relay coil L+ (DC) Number of operating cycles, max. Number of operating cycles, max. Switching capacity of contacts - with inductive load, max. - on lamp load, max. - with resistive load, max. 2 A Cable length Shielded, max. unshielded, max. Interrupts/diagnostics/status information Alarms Diagnostic alarm Potential separation Potential separation Potential separation Petermissible potential difference Permissible potential difference Permissible potential difference	Relay outputs	
Number of operating cycles, max. Switching capacity of contacts	Number of relay outputs	16
Switching capacity of contacts	 Rated supply voltage of relay coil L+ (DC) 	24 V
with inductive load, max on lamp load, max with resistive load,	 Number of operating cycles, max. 	mechanically 10 million, at rated load voltage 100 000
- on lamp load, max. - with resistive load, max. - with resistive load, max. 2 A Cable length • shielded, max. • unshielded, max. 150 m Interrupts/diagnostics/status information Alarms • Diagnostic alarm Potential separation Potential separation Potential separation digital outputs • between the channels • between the channels, in groups of • between the channels and backplane bus Permissible potential difference	Switching capacity of contacts	
with resistive load, max. Cable length shielded, max. unshielded, max. Interrupts/diagnostics/status information Alarms Diagnostic alarm Yes Diagnostics indication LED for status of the outputs Potential separation Potential separation digital outputs Relays between the channels between the channels, in groups of between the channels and backplane bus Permissible potential difference	— with inductive load, max.	2 A
Cable length • shielded, max. • unshielded, max. 150 m Interrupts/diagnostics/status information Alarms • Diagnostic alarm • Diagnostics indication LED • for status of the outputs Potential separation Potential separation digital outputs • between the channels • between the channels, in groups of • between the channels and backplane bus Permissible potential difference	— on lamp load, max.	30 W with DC, 200 W with AC
shielded, max. unshielded, max. Interrupts/diagnostics/status information Alarms Diagnostic alarm Yes Diagnostics indication LED for status of the outputs Potential separation Potential separation digital outputs between the channels between the channels, in groups of between the channels and backplane bus Permissible potential difference 500 m 1500	— with resistive load, max.	2 A
unshielded, max. Interrupts/diagnostics/status information Alarms Diagnostic alarm Yes Diagnostics indication LED for status of the outputs Potential separation Potential separation digital outputs between the channels between the channels, in groups of between the channels and backplane bus Permissible potential difference	Cable length	
Interrupts/diagnostics/status information Alarms • Diagnostic alarm Potential separation Potential separation digital outputs • between the channels • between the channels, in groups of • between the channels and backplane bus Permissible potential difference	• shielded, max.	500 m
Alarms • Diagnostic alarm Piagnostics indication LED • for status of the outputs Potential separation Potential separation digital outputs • between the channels • between the channels, in groups of • between the channels and backplane bus Permissible potential difference	• unshielded, max.	150 m
Alarms • Diagnostic alarm Piagnostics indication LED • for status of the outputs Potential separation Potential separation digital outputs • between the channels • between the channels, in groups of • between the channels and backplane bus Permissible potential difference	Interrupts/diagnostics/status information	
Diagnostics indication LED • for status of the outputs Potential separation Potential separation digital outputs • between the channels • between the channels, in groups of • between the channels and backplane bus Permissible potential difference		
• for status of the outputs Potential separation Potential separation digital outputs • between the channels • between the channels, in groups of • between the channels and backplane bus Permissible potential difference Yes Relays 4 1500 V AC for 1 minute	Diagnostic alarm	Yes
Potential separation Potential separation digital outputs • between the channels • between the channels, in groups of • between the channels and backplane bus Permissible potential difference	Diagnostics indication LED	
Potential separation digital outputs • between the channels • between the channels, in groups of • between the channels and backplane bus Permissible potential difference	• for status of the outputs	Yes
Potential separation digital outputs • between the channels • between the channels, in groups of • between the channels and backplane bus Permissible potential difference	Potential separation	
 between the channels, in groups of between the channels and backplane bus 1500 V AC for 1 minute Permissible potential difference	<u>·</u>	
between the channels and backplane bus 1500 V AC for 1 minute Permissible potential difference	• between the channels	Relays
Permissible potential difference	• between the channels, in groups of	4
	• between the channels and backplane bus	1500 V AC for 1 minute
	Permissible potential difference	
		750 V AC for 1 minute
Degree and class of protection	Degree and class of protection	
Degree of protection acc. to EN 60529		
• IP20 Yes	• IP20	Yes
Standards, approvals, certificates	Standards, approvals, certificates	
CE mark Yes		Yes
CSA approval Yes	CSA approval	
UL approval Yes		Yes

cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes
Marine approval	Yes
Ambient conditions	
Free fall	
• Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
• min.	-20 °C
• max.	60 °C; Number of simultaneously activated outputs: 8 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 16 at 55 °C horizontal or 45 °C vertical
 horizontal installation, min. 	-20 °C
horizontal installation, max.	60 °C
• vertical installation, min.	-20 °C
• vertical installation, max.	50 °C
• permissible temperature change	5°C to 55°C, 3°C / minute
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Air pressure acc. to IEC 60068-2-13	
Storage/transport, min.	660 hPa
 Storage/transport, max. 	1 080 hPa
Relative humidity	
 Operation at 25 °C without condensation, max. 	95 %
Connection method	
required front connector	Yes
Mechanics/material	
Enclosure material (front)	
• Plastic	Yes
Dimensions	
Width	45 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	260 g
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