

Overview



- Digital outputs as supplement to the integral I/O of the CPUs
- For flexible adaptation of the controller to the relevant task
- For subsequent expansion of the system with additional outputs

Technical specifications

Article number	6ES7222-1BF32-0XB0	6ES7222-1BH32-0XB0	6ES7222-1HF32-0XB0	6ES7222-1HH32-0XB0	6ES7222-1XF32-0XB0
	DIGITAL OUTPUT SM1222, 8 DO, 24V DC	DIGITAL OUTPUT SM1222, 16 DO, 24V DC	DIGITAL OUTPUT SM 1222, 8 DO, RELAY	DIGITAL OUTPUT SM1222, 16 DO, RELAY	DIGITAL OUTPUT SM 1222, 8 DO, CHANGEOVER
General information					
Product type designation	SM 1222 DQ 8x24VDC	SM 1222 DQ 16x24VDC	SM 1222 DQ 8xRelay	SM 1222 DQ 16xRelay	SM 1222 DQ 8x relay changeover contact
Input current					
from backplane bus 5 V DC, max.	120 mA	140 mA	120 mA	135 mA	140 mA
Digital outputs					
• from load voltage L+, max.			11 mA/relay coil	11 mA/relay coil	16.7 mA/relay coil
Power loss					
Power loss, typ.	1.5 W	2.5 W	4.5 W	8.5 W	5 W
Digital outputs					
Number of digital outputs	8	16	8	16	8
• in groups of	1	1	2	1	1
Short-circuit protection	No; to be provided externally	No; to be provided externally	No; to be provided externally	No; to be provided externally	No; to be provided externally
Limitation of inductive shutdown voltage to	typ. (L+) -48 V	typ. (L+) -48 V			
Switching capacity of the outputs					
• with resistive load, max.	0.5 A	0.5 A	2 A	2 A	2 A
• on lamp load, max.	5 W	5 W	30 W with DC, 200 W with AC	30 W with DC, 200 W with AC	30 W with DC, 200 W with AC
Output voltage					
• Rated value (DC)	24 V	24 V	5 V DC to 30 V DC	5 V DC to 30 V DC	5 V DC to 30 V DC
• Rated value (AC)			5 V AC to 250 V AC	5 V AC to 250 V AC	5 V AC to 250 V AC
• for signal "0", max.	0.1 V; with 10 kOhm load	0.1 V; with 10 kOhm load			
• for signal "1", min.	20 V DC	20 V DC			
Output current					
• for signal "1" rated value	0.5 A	0.5 A			
• for signal "1" permissible range, max.			2 A	2 A	2 A
• for signal "0" residual current, max.	10 µA	10 µA			
Output delay with resistive load					
• "0" to "1", max.	50 µs	50 µs	10 ms	10 ms	10 ms
• "1" to "0", max.	200 µs	200 µs	10 ms	10 ms	10 ms
Total current of the outputs (per group)					
horizontal installation					
- up to 50 °C, max.	4 A; Current per mass	8 A; Current per mass	10 A; Current per mass	10 A; Current per mass	2 A; Current per mass

SIMATIC S7-1200 Basic Controllers

I/O modules

Digital modules

SM 1222 digital output modules

Technical specifications (continued)

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Relay outputs					
• Number of relay outputs			8	16	8
• Rated supply voltage of relay coil L+ (DC)			24 V	24 V	24 V
• Number of operating cycles, max.			mechanically 10 million, at rated load voltage 100 000	mechanically 10 million, at rated load voltage 100 000	mechanically 10 million, at rated load voltage 100 000
Switching capacity of contacts					
- with inductive load, max.	0.5 A	0.5 A	2 A	2 A	2 A
- on lamp load, max.	5 W	5 W	30 W with DC, 200 W with AC	30 W with DC, 200 W with AC	30 W with DC, 200 W with AC
- with resistive load, max.	0.5 A	0.5 A	2 A	2 A	2 A
Cable length					
• shielded, max.	500 m	500 m	500 m	500 m	500 m
• unshielded, max.	150 m	150 m	150 m	150 m	150 m
Interrupts/diagnostics/status information					
Alarms					
• Diagnostic alarm	Yes	Yes	Yes	Yes	Yes
Diagnostics indication LED					
• for status of the outputs	Yes	Yes	Yes	Yes	Yes
Potential separation					
Potential separation digital outputs					
• between the channels			Relays	Relays	Relays
• between the channels, in groups of	1	1	2	4	1
• between the channels and backplane bus	500 V AC	500 V AC	1500 V AC for 1 minute	1500 V AC for 1 minute	1500 V AC for 1 minute
Permissible potential difference					
between different circuits			750 V AC for 1 minute	750 V AC for 1 minute	750 V AC for 1 minute
Degree and class of protection					
Degree of protection acc. to EN 60529					
• IP20	Yes	Yes	Yes	Yes	Yes
Standards, approvals, certificates					
CE mark	Yes	Yes	Yes	Yes	Yes
CSA approval	Yes	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes	Yes
FM approval	Yes	Yes	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes	Yes
Marine approval					
• Marine approval	Yes	Yes	Yes	Yes	Yes
Ambient conditions					
Free fall					
• Fall height, max.	0.3 m; five times, in product package	0.3 m; five times, in product package	0.3 m; five times, in product package	0.3 m; five times, in product package	0.3 m; five times, in product package
Ambient temperature during operation					
• permissible temperature range	-20 °C to +60 °C horizontal mounting, -20 °C to 50 °C vertical mounting, 95% humidity, non-condensing	-20 °C to +60 °C horizontal mounting, -20 °C to 50 °C vertical mounting, 95% humidity, non-condensing	-20 °C to +60 °C horizontal mounting, -20 °C to 50 °C vertical mounting, 95% humidity, non-condensing	-20 °C to +60 °C horizontal mounting, -20 °C to 50 °C vertical mounting, 95% humidity, non-condensing	-20 °C to +60 °C horizontal mounting, -20 °C to 50 °C vertical mounting, 95% humidity, non-condensing
• min.	-20 °C	-20 °C	-20 °C	-20 °C	-20 °C
• max.	60 °C	60 °C	60 °C	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	60 °C; Number of simultaneously activated outputs: 4 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 at 55 °C horizontal or 45 °C vertical

Technical specifications (continued)

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Connection method					
required front connector	Yes	Yes	Yes	Yes	Yes
Mechanics/material					
Enclosure material (front)					
• Plastic	Yes	Yes	Yes	Yes	Yes
Dimensions					
Width	45 mm	45 mm	45 mm	45 mm	70 mm
Height	100 mm	100 mm	100 mm	100 mm	100 mm
Depth	75 mm	75 mm	75 mm	75 mm	75 mm
Weights					
Weight, approx.	180 g	220 g	190 g	260 g	310 g

Ordering data

SM 1222 digital output signal module

8 outputs, 24 V DC;
0.5 A, 5 W, isolated

16 outputs, 24 V DC;
0.5 A, 5 W, isolated

8 relay outputs,
5 ... 30 V DC / 5 ... 250 V AC, 2 A,
30 W DC / 200 W AC

8 relay outputs,
change-over contact,
5 ... 30 V DC / 5 ... 250 V AC, 2 A,
30 W DC / 200 W AC

16 relay outputs,
5 ... 30 V DC / 5 ... 250 V AC, 2 A,
30 W DC / 200 W AC

Extension cable for two-tier configuration

For connecting digital/analog
signal modules;
length 2 m

Article No.

6ES7222-1BF32-0XB0

6ES7222-1BH32-0XB0

6ES7222-1HF32-0XB0

6ES7222-1XF32-0XB0

6ES7222-1HH32-0XB0

6ES7290-6AA30-0XA0

Article No.

Terminal block (spare part)

For 6ES7222-1BF32-0XB0,
6ES7222-1BH32-0XB0

- With 7 screws, zinc-plated; 4 pcs.

For 6ES7222-1HF32-0XB0

- With 7 screws, tin-coated,
left coded; 4 units

For 6ES7222-1HH32-0XB0

- With 7 screws, tin-coated,
right coded; 4 units

For 6ES7222-1XF32-0XB0

- With 11 screws, tin-coated; 4 units

Front flap set (spare part)

For modules with a width of 45 mm

For modules with a width of 70 mm

6ES7292-1AG30-0XA0

6ES7292-1AG40-0XA1

6ES7292-1AG40-0XA0

6ES7292-1AL30-0XA0

6ES7291-1BA30-0XA0

6ES7291-1BB30-0XA0