## **SIEMENS**

## Data sheet

6ES7522-5FH00-0AB0

SIMATIC S7-1500, digital output module DQ 16x230 V AC/1 A ST; TRIAC; 16 channels in groups of 2; 2 A per group; Substitute value: Front connector (screw terminals or push-in) to be ordered separately



DQ 16x230VAC/1A ST (Triac)
FS01
V1.0.0
Yes
Yes; I&M0 to I&M3
No
Yes
V13 SP1 / -
V5.5 SP3 / -
V1.0 / V5.1
V2.3 / -
Yes
No
No

Output voltage Rated value (AC)  Power Power loss Power loss Power loss Type of digital outputs Type output outputs Type output output outputs Type output outpu	Oversampling	No
Output voltage Rated value (AC)  Power  Power available from the backplane bus  1.2 W  Power loss Power loss, typ.  11.1 W  Poilal outputs  Type of digital outputs  16  Current-sourcing Yes  Current-sourcing Yes  Current-sourcing Yes  Short-circuit protection • built-in fuse  Size of motor starters according to NEMA, max.  • with resistive load, max. • on lamp load, max.  • for signal "1", min. • for signal "1" permissible range, min. • for signal "1" permissible range, max. • or signal "1" permissible range, max. • or or signal "1" permissible range, max. • or or signal "0" residual current, max.  Output delay with resistive load • "1" to "0", max. • 1 AC cycle  Por redundant control of a load  Ves  Switching of two outputs  1 AC cycle  1		Yes
Rated value (AC)  Power Power available from the backplane bus  1.2 W  Power loss Power loss. Power loss, typ.  11.1 W  Digital outputs Triac Number of digital outputs 16 Current-sinking Yes Output-sourcing Oligital outputs, parameterizable Short-circuit protection No • built-in fuse Size of motor starters according to NEMA, max. Switching capacity of the outputs  • with resistive load, max. • on lamp load, max.  Output voltage • for signal "1", min.  Cutput current  • or signal "1" rated value • for signal "1" permissible range, min. • for signal "1" permissible range, max. • for signal "1" permissible range, max. • or or signal "0" residual current, max.  Output delay with resistive load • "0" to "1", max. • "1" to "0", max.  Parallel switching of two outputs  • for redundant control of a load Switching frequency • with resistive load, max. • of or redundant control of a load Switching frequency • with resistive load, max. • on lamp load, max.  10 Hz • with resistive load, max. • 10 Hz • "1" to "0", max.  10 Hz • with resistive load, max. • for redundant control of a load  Ves Switching frequency • with resistive load, max. • with inductive load, max. • on lamp load, max.  10 Hz • with inductive load, max. • on lamp load, max. • on lamp load, max.  1 Hz  Total current of the outputs		
Power oss Power loss Power loss Power loss, typ. 11.1 W  Digital outputs Type of digital output 16 Number of digital outputs 16 Current-sourcing Yes Current-sourcing Yes Short-circuit protection No Size of motor starters according to NEMA, max. 4 Switching capacity of the outputs  • with resistive load, max. 1 A • for signal "1" permissible range, min. 10 mA • for signal "1" permissible range, max. 1 A • for signal "1" permissible range, max. 1 A • for signal "1" permissible range, max. 1 A • for signal "1" permissible range, max. 1 A • for signal "1" permissible range, max. 1 A • for signal "1" permissible range, max. 1 AC cycle • "1" to "0", max. 1 AC cycle  Parallel switching of two outputs  • for redundant control of a load Yes  Switching fequency • with resistive load, max. 1 AC cycle  • "1" to "0", max. 1 AC cycle  • for redundant control of a load Yes  Switching fequency • with resistive load, max. 1 AE • of or inampload, max. 1 AE • with inductive load, max. 1 AE • with inductive load, max. 1 AE • on lampload, max. 1 HE  Total current of the outputs		000 V 400 000 V 40 50 00 U
Power loss Power loss, typ. 11.1 W  Digital outputs Type of digital output Triac Number of digital outputs 16 Current-sinking Yes Current-sourcing Yes Digital outputs, parameterizable Yes Short-circuit protection No • built-in fuse 6.3 A melting fuse, slow-blow Size of motor starters according to NEMA, max. 4 Switching capacity of the outputs • with resistive load, max. 50 W  Output voltage • for signal "1" rated value 1 A • for signal "1" permissible range, min. 5 A; max. 1 AC cycle • for signal "1" permissible range, max. 2 mA  Output voltay with resistive load • "0" to "1", max. 1 AC cycle  Parallel switching of two outputs • for logic links No • for uprating No • for redundant control of a load Yes  Switching requency • with resistive load, max. 1 O Hz • with resistive load, max. 1 AC cycle  Parallel switching of two outputs • for redundant control of a load Yes  Switching requency • with resistive load, max. 10 Hz • with inductive load, max. 10 Hz • with inductive load, max. 10 Hz • with inductive load, max. 1 Hz  Total current of the outputs	Rated value (AC)	230 V; 120/230 V AC, 50/60 Hz
Power loss Power loss, typ. 11.1 W  Digital outputs Type of digital output 16 Current-sinking Yes Current-sourcing Yes Digital outputs, parameterizable Yes Short-circuit protection No • built-in fuse 6.3 A melting fuse, slow-blow Size of motor starters according to NEMA, max. 4 Switching capacity of the outputs • with resistive load, max. 1 A • on lamp load, max. 50 W  Output voltage • for signal "1", min. L1 (-1.5 V) at maximum output current; L1 (-8.5 V) at minimum output current  • for signal "1" rated value 1 A • for signal "1" permissible range, min. 10 mA • for signal "1" permissible range, max. 2 mA  Output delay with resistive load • "0" to "1", max. 1 AC cycle • "1" to "0", max. 1 AC cycle  Parallel switching of two outputs • for outputing No • for redundant control of a load Yes Switching frequency • with resistive load, max. 10 Hz • with resistive load, max. 10 Hz • with resistive load, max. 10 Hz • with inductive load, max. 1 Hz  Total current of the outputs	Power	
Power loss, typ. 11.1 W  Digital outputs  Type of digital output Triac  Number of digital outputs 16  Current-sourcing Yes  Digital outputs, parameterizable Yes  Short-circuit protection No  • built-in fuse Size of motor starters according to NEMA, max. 4  Switching capacity of the outputs  • with resistive load, max. 1A  • on lamp load, max. 50 W  Output voltage  • for signal "1", min. L1 (-1.5 V) at maximum output current; L1 (-8.5 V) at minimum output current  • for signal "1" permissible range, min. 10 mA  • for signal "1" permissible range, max. 2 mA  • for signal "1" permissible range, max. 3 max. 4 max. 1 AC cycle  • "1" to "0", max. 1 AC cycle  • "1" to "0", max. 1 AC cycle  Parallel switching of two outputs  • for logic links No  • for uprating No  • for redundant control of a load Yes  Switching frequency  • with resistive load, max. 10 Hz  • with resistive load, max. 1 Hz  Total current of the outputs	Power available from the backplane bus	1.2 W
Power loss, typ. 11.1 W  Digital outputs  Type of digital output Triac  Number of digital outputs 16  Current-sourcing Yes  Digital outputs, parameterizable Yes  Short-circuit protection No  • built-in fuse Size of motor starters according to NEMA, max. 4  Switching capacity of the outputs  • with resistive load, max. 1A  • on lamp load, max. 50 W  Output voltage  • for signal "1", min. L1 (-1.5 V) at maximum output current; L1 (-8.5 V) at minimum output current  • for signal "1" permissible range, min. 10 mA  • for signal "1" permissible range, max. 2 mA  • for signal "1" permissible range, max. 3 max. 4 max. 1 AC cycle  • "1" to "0", max. 1 AC cycle  • "1" to "0", max. 1 AC cycle  Parallel switching of two outputs  • for logic links No  • for uprating No  • for redundant control of a load Yes  Switching frequency  • with resistive load, max. 10 Hz  • with resistive load, max. 1 Hz  Total current of the outputs	Power loss	
Type of digital outputs 16  Current-sinking Yes  Current-sourcing Yes  Digital outputs, parameterizable Yes  Short-circuit protection No  • built-in fuse 6.3 A melting fuse, slow-blow  Size of motor starters according to NEMA, max. 4  Switching capacity of the outputs  • with resistive load, max. 50 W  Output voltage  • for signal "1", min. L1 (-1.5 V) at maximum output current; L1 (-8.5 V) at minimum output current  Output current  • for signal "1" rated value 1 A (-1.5 V) at maximum output current; L1 (-8.5 V) at minimum output current  • for signal "1" residual current, max. 15 A; max. 1 AC cycle 2 mA  Output delay with resistive load  • "0" to "1", max. 1 AC cycle  • "1" to "0", max. 1 AC cycle  Parallel switching of two outputs  • for logic links No • for uprating No • for outputing for max. 10 Hz • with resistive load, max. 1 Hz  Total current of the outputs		11.1 W
Type of digital outputs 16  Current-sinking Yes  Current-sourcing Yes  Digital outputs, parameterizable Yes  Short-circuit protection No  • built-in fuse 6.3 A melting fuse, slow-blow  Size of motor starters according to NEMA, max. 4  Switching capacity of the outputs  • with resistive load, max. 50 W  Output voltage  • for signal "1", min. L1 (-1.5 V) at maximum output current; L1 (-8.5 V) at minimum output current  Output current  • for signal "1" rated value 1 A (-1.5 V) at maximum output current; L1 (-8.5 V) at minimum output current  • for signal "1" residual current, max. 15 A; max. 1 AC cycle 2 mA  Output delay with resistive load  • "0" to "1", max. 1 AC cycle  • "1" to "0", max. 1 AC cycle  Parallel switching of two outputs  • for logic links No • for uprating No • for outputing for max. 10 Hz • with resistive load, max. 1 Hz  Total current of the outputs	Digital outputs	
Number of digital outputs  Current-sinking  Current-sourcing  Pes  Digital outputs, parameterizable  Yes  Short-circuit protection  • built-in fuse  Size of motor starters according to NEMA, max.  Switching capacity of the outputs  • with resistive load, max.  • on lamp load, max.  • for signal "1", min.  • for signal "1" permissible range, min.  • for signal "1" permissible range, max.  • for signal "1" permissible range, max.  • for signal "0" residual current, max.   Output delay with resistive load  • "0" to "1", max.  • for logic links  • for uprating  • for redundant control of a load  Switching frequency  • with resistive load, max.  16 Ac cycle  • "1" to "0", max.  1 AC cycle  Parallel switching of two outputs  • for prograting  • with resistive load, max.  10 Hz  • with ninductive load, max.  10 Hz  • with resistive load, max.  10 Hz  • with inductive load, max.  10 Hz  • with current of the outputs		Triac
Current-sinking Yes  Current-sourcing Yes  Digital outputs, parameterizable Yes  Short-circuit protection No  • built-in fuse  Size of motor starters according to NEMA, max.  Switching capacity of the outputs  • with resistive load, max.  • on lamp load, max.  Output voltage  • for signal "1", min.  L1 (-1.5 V) at maximum output current; L1 (-8.5 V) at minimum output current  output current  • for signal "1" rated value  • for signal "1" permissible range, min.  • for signal "1" permissible range, max.  • for signal "0" residual current, max.  Output delay with resistive load  • "0" to "1", max.  • "1" to "0", max.  1 AC cycle  Parallel switching of two outputs  • for logic links  • for uprating  • for redundant control of a load  No  • with resistive load, max.  • und load load load  To load current of the outputs		
Current-sourcing  Digital outputs, parameterizable  Short-circuit protection  • built-in fuse  Size of motor starters according to NEMA, max.  Switching capacity of the outputs  • with resistive load, max.  • on lamp load, max.  50 W  Output voltage  • for signal "1", min.  Cutput current  • for signal "1" permissible range, min.  • for signal "1" permissible range, max.  • for signal "1" residual current, max.  Dutput delay with resistive load  • "0" to "1", max.  • "1" to "0", max.  • for logic links  • for or redundant control of a load  Switching frequency  • with resistive load, max.  10 Hz  1 Hz		Yes
Digital outputs, parameterizable  Short-circuit protection  • built-in fuse  Size of motor starters according to NEMA, max.  Switching capacity of the outputs  • with resistive load, max.  • on lamp load, max.  • for signal "1", min.  • for signal "1" permissible range, min.  • for signal "1" permissible range, max.  • for signal "0" residual current, max.  • for signal "0" residual current, max.  • for on the sistive load  • for on the sistive load  • for signal "1" permissible range, min.  • for signal "1" permissible range, max.  • for signal "0" residual current, max.  Output delay with resistive load  • "0" to "1", max.  • "1" to "0", max.  • for logic links  • for logic links  • for redundant control of a load  Switching frequency  • with resistive load, max.  • with inductive load, max.  • with inductive load, max.  • to lamp load, max.  • Total current of the outputs		Yes
Size of motor starters according to NEMA, max.  Switching capacity of the outputs  with resistive load, max.  on lamp load, max.  1 A  for signal "1", min.  Output current  for signal "1" rated value  for signal "1" permissible range, min.  for signal "0" residual current, max.  1 A  Output delay with resistive load  """ to "0", max.  1 AC cycle  1 AC cycle  "1" to "0", max.  1 AC cycle  Parallel switching of two outputs  for redundant control of a load  with resistive load, max.  with inductive load, max.  on lamp load, max.  1 AC  Output delay with resistive load  1 AC  Yes  Switching frequency  with resistive load, max.  1 AC  Output delay with resistive load  1 AC  Yes  Switching frequency  with resistive load, max.  1 AC  Output delay with resistive load  1 AC  Yes  Switching frequency  with resistive load, max.  10 Hz  Output delay with resistive load, max.  11 Hz  Total current of the outputs		Yes
Size of motor starters according to NEMA, max.  Switching capacity of the outputs  with resistive load, max. on lamp load, max. 1 A  50 W  Output voltage  for signal "1", min.  Utjut current  for signal "1" rated value for signal "1" permissible range, min. for signal "1" permissible range, max. for signal "0" residual current, max.  Output delay with resistive load  "0" to "1", max. "1" to "0", max. To for logic links for outpurting for redundant control of a load  with resistive load with resistive load for redundant control of a load  with resistive load, max. with inductive load, max. with inductive load, max. for lamp load, max. I Hz  Total current of the outputs	Short-circuit protection	No
Switching capacity of the outputs  • with resistive load, max. • on lamp load, max.  • on lamp load, max.  • on lamp load, max.  • of risignal "1", min.  L1 (-1.5 V) at maximum output current; L1 (-8.5 V) at minimum output current  Output current  • for signal "1" rated value • for signal "1" permissible range, min. • for signal "1" permissible range, max. • for signal "0" residual current, max.  Output delay with resistive load  • "0" to "1", max. • "1" to "0", max.  1 AC cycle  Parallel switching of two outputs  • for logic links • for uprating • for redundant control of a load  Switching frequency  • with resistive load, max. • with inductive load, max. • with inductive load, max. • on lamp load, max.  • 1 Hz  Total current of the outputs	• built-in fuse	6.3 A melting fuse, slow-blow
with resistive load, max.     on lamp load, max.     on lamp load, max.  Output voltage      of r signal "1", min.  L1 (-1.5 V) at maximum output current; L1 (-8.5 V) at minimum output current  Output current      of r signal "1" rated value     of r signal "1" permissible range, min.     of r signal "1" permissible range, max.     of r signal "0" residual current, max.  Output delay with resistive load      o''o' to "1", max.     o'to "0", max.  I AC cycle  Parallel switching of two outputs      of or uprating     of or redundant control of a load  With resistive load, max.  with inductive load, max.  with inductive load, max.  on lamp load, max.  I AC  Total current of the outputs	Size of motor starters according to NEMA, max.	4
on lamp load, max.  Output voltage      for signal "1", min.	Switching capacity of the outputs	
Output voltage  • for signal "1", min.  L1 (-1.5 V) at maximum output current; L1 (-8.5 V) at minimum output current  Output current  • for signal "1" rated value • for signal "1" permissible range, min. • for signal "1" permissible range, max. • for signal "0" residual current, max.  Output delay with resistive load  • "0" to "1", max. • "1" to "0", max.  Parallel switching of two outputs  • for logic links • for uprating • for redundant control of a load  Switching frequency • with resistive load, max. • with inductive load, max. • with inductive load, max. • on lamp load, max.  • total current of the outputs  L1 (-1.5 V) at maximum output current; L1 (-8.5 V) at minimum output current, max.	• with resistive load, max.	1 A
for signal "1", min.          Utput current          of r signal "1" rated value	• on lamp load, max.	50 W
output current  • for signal "1" rated value • for signal "1" permissible range, min. • for signal "1" permissible range, max. • for signal "0" residual current, max.  Output delay with resistive load • "0" to "1", max. • "1" to "0", max.  Parallel switching of two outputs  • for uprating • for redundant control of a load  Switching frequency • with resistive load, max. • with inductive load, max. • on lamp load, max.  1 AC  1 AC cycle  1 AC cycle  1 AC cycle  No  1 AC cycle  No  1 AC cycle  1	Output voltage	
<ul> <li>for signal "1" rated value</li> <li>for signal "1" permissible range, min.</li> <li>for signal "1" permissible range, max.</li> <li>for signal "0" residual current, max.</li> <li>Output delay with resistive load</li> <li>"0" to "1", max.</li> <li>1 AC cycle</li> <li>"1" to "0", max.</li> <li>Parallel switching of two outputs</li> <li>for logic links</li> <li>for uprating</li> <li>for redundant control of a load</li> <li>Switching frequency</li> <li>with resistive load, max.</li> <li>with inductive load, max.</li> <li>on lamp load, max.</li> <li>Total current of the outputs</li> </ul>	● for signal "1", min.	
• for signal "1" permissible range, min.  • for signal "1" permissible range, max.  • for signal "0" residual current, max.  2 mA  Output delay with resistive load  • "0" to "1", max.  • "1" to "0", max.  1 AC cycle  Parallel switching of two outputs  • for logic links  • for uprating  • for redundant control of a load  Switching frequency  • with resistive load, max.  • with inductive load, max.  • on lamp load, max.  1 to mA  15 A; max. 1 AC cycle  2 mA  1 AC cycle  1 AC cycle  1 AC cycle  No  No  No  No  1 AC cycle  No  No  1 AC cycle	Output current	
for signal "1" permissible range, max.     for signal "0" residual current, max.  Output delay with resistive load      "0" to "1", max.     1 AC cycle      "1" to "0", max.      1 AC cycle  Parallel switching of two outputs      for uprating     for redundant control of a load  Switching frequency      with resistive load, max.      with inductive load, max.      on lamp load, max.  Total current of the outputs	• for signal "1" rated value	1 A
for signal "0" residual current, max.  Output delay with resistive load          "0" to "1", max.	• for signal "1" permissible range, min.	10 mA
Output delay with resistive load  • "0" to "1", max.  • "1" to "0", max.  1 AC cycle  Parallel switching of two outputs  • for logic links  • for uprating  • for redundant control of a load  Switching frequency  • with resistive load, max.  • with inductive load, max.  • on lamp load, max.  Total current of the outputs	• for signal "1" permissible range, max.	15 A; max. 1 AC cycle
<ul> <li>"0" to "1", max.</li> <li>"1" to "0", max.</li> <li>1 AC cycle</li> </ul> Parallel switching of two outputs <ul> <li>for logic links</li> <li>for uprating</li> <li>for redundant control of a load</li> <li>Switching frequency</li> <li>with resistive load, max.</li> <li>with inductive load, max.</li> <li>on lamp load, max.</li> <li>Total current of the outputs</li> </ul>	• for signal "0" residual current, max.	2 mA
<ul> <li>"1" to "0", max.</li> <li>Parallel switching of two outputs</li> <li>for logic links</li> <li>for uprating</li> <li>for redundant control of a load</li> <li>Switching frequency</li> <li>with resistive load, max.</li> <li>with inductive load, max.</li> <li>on lamp load, max.</li> <li>Total current of the outputs</li> </ul>	Output delay with resistive load	
Parallel switching of two outputs  • for logic links • for uprating • for redundant control of a load  Yes  Switching frequency • with resistive load, max. • with inductive load, max. • on lamp load, max.  10 Hz  10 Hz  11 Hz  Total current of the outputs	• "0" to "1", max.	1 AC cycle
<ul> <li>for logic links</li> <li>for uprating</li> <li>for redundant control of a load</li> <li>Switching frequency</li> <li>with resistive load, max.</li> <li>with inductive load, max.</li> <li>on lamp load, max.</li> <li>Total current of the outputs</li> </ul> No No No No No Yes Switching frequency <ul> <li>with resistive load, max.</li> <li>10 Hz</li> <li>10 Hz</li> <li>11 Hz</li> </ul> Total current of the outputs	• "1" to "0", max.	1 AC cycle
<ul> <li>for uprating</li> <li>for redundant control of a load</li> <li>Switching frequency</li> <li>with resistive load, max.</li> <li>with inductive load, max.</li> <li>on lamp load, max.</li> <li>Total current of the outputs</li> </ul> No Yes Yes O.5 Hz 10 Hz 0.5 Hz 1 Hz Total current of the outputs	Parallel switching of two outputs	
for redundant control of a load     Yes  Switching frequency      with resistive load, max.     with inductive load, max.     on lamp load, max.  10 Hz  0.5 Hz  1 Hz  Total current of the outputs	• for logic links	No
Switching frequency  • with resistive load, max.  • with inductive load, max.  • on lamp load, max.  10 Hz  0.5 Hz  1 Hz  Total current of the outputs	• for uprating	No
<ul> <li>with resistive load, max.</li> <li>with inductive load, max.</li> <li>on lamp load, max.</li> <li>Total current of the outputs</li> </ul>	<ul> <li>for redundant control of a load</li> </ul>	Yes
<ul> <li>with inductive load, max.</li> <li>on lamp load, max.</li> <li>Total current of the outputs</li> </ul>	Switching frequency	
on lamp load, max.  1 Hz  Total current of the outputs	• with resistive load, max.	10 Hz
Total current of the outputs	• with inductive load, max.	0.5 Hz
	• on lamp load, max.	1 Hz
Current per channel, max.     1 A; see additional description in the manual	Total current of the outputs	
	Current per channel, max.	1 A; see additional description in the manual

Current per group, max.	2 A; see additional description in the manual
Current per module, max.	10 A; see additional description in the manual
Cable length	, I
• shielded, max.	1 000 m
• unshielded, max.	600 m
Interrupts/diagnostics/status information  Diagnostics function	No
Substitute values connectable	Yes
Alarms	165
Diagnostic alarm	No
Maintenance interrupt	No
Diagnostic messages	
Monitoring the supply voltage	No
Wire-break	No
Short-circuit	No
Diagnostics indication LED	
• RUN LED	Yes; green LED
• ERROR LED	Yes; red LED
Monitoring of the supply voltage (PWR-LED)	No
Channel status display	Yes; green LED
for channel diagnostics	No
• for module diagnostics	Yes; red LED
Potential separation	
Potential separation channels	
• between the channels	No
• between the channels, in groups of	2
• between the channels and backplane bus	Yes
Permissible potential difference	
between different circuits	250 V AC between the channels and the backplane bus; 500 V AC between the channels
Isolation	
Isolation tested with	3 100 V DC
Standards, approvals, certificates	
Suitable for safety functions	No
Ambient conditions	
Ambient temperature during operation	
horizontal installation, min.	0 °C
<ul> <li>horizontal installation, max.</li> </ul>	60 °C
• vertical installation, min.	0 °C
• vertical installation, max.	60 °C

Dimensions	
Width	35 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	310 g
last modified:	04/10/2020