



SIMATIC S7-400, function module FM 453, (3-channel) for positioning with servo and stepper motors, incl. configuration package on CD

Figure similar

Supply voltage	
Auxiliary voltage 1L+, load voltage 2L+	
• Rated value (DC)	24 V
• permissible range, lower limit (DC)	20.4 V; Dynamic 18.5 V
• permissible range, upper limit (DC)	28.8 V; dynamic 30.2 V
Input current	
from load voltage 1L+, max.	1 A; with 24 V position encoder; 1 A for 5 V position encoder
from load voltage 2L+ to 4L+, max.	2 A; Per channel
from backplane bus 5 V DC, max.	1.6 A; Rated current
Encoder supply	
5 V encoder supply	
• 5 V	Yes
• Output current, max.	300 mA
• Cable length, max.	35 m; at max. 210 mA; 25 m at max. 300 mA
24 V encoder supply	
• 24 V	Yes
• Cable length, max.	100 m; at max. 300 mA
Power loss	
Power loss, typ.	8 W
Digital inputs	
Number of digital inputs	6; for each channel/axis
Functions	configurable
Input voltage	
• Rated value (DC)	24 V
• for signal "0"	-3 to +5 V (max. 3 mA)
• for signal "1"	11 to 30 V (max. 7 mA)
Input delay (for rated value of input voltage)	
for standard inputs	
— at "0" to "1", max.	15 µs; via input voltage range, 8 µs at 24 V DC
— at "1" to "0", max.	45 µs; via input voltage range
Digital outputs	
Number of digital outputs	4; for each channel/axis
Functions	configurable
Short-circuit protection	Yes
Output voltage	
• Rated value (DC)	24 V
• for signal "1", min.	UP - 0,3 V
Output current	
• for signal "1" rated value	0.5 A; at 40 °C; 0.1 A at 60 °C

<ul style="list-style-type: none"> <li>• for signal "1" permissible range for 0 to 40 °C, min.</li> <li>• for signal "1" permissible range for 0 to 40 °C, max.</li> <li>• for signal "1" permissible range for 40 to 60 °C, min.</li> <li>• for signal "1" permissible range for 40 to 60 °C, max.</li> <li>• for signal "0" residual current, max.</li> </ul>	5 mA 0.6 A 5 mA 0.12 A 2 mA
<b>Switching frequency</b>	
<ul style="list-style-type: none"> <li>• with resistive load, max.</li> <li>• with inductive load, max.</li> </ul>	100 Hz 0.25 Hz
<b>Encoder</b>	
<b>Connectable encoders</b>	
<ul style="list-style-type: none"> <li>• Incremental encoder (symmetrical)</li> <li>• Absolute encoder (SSI)</li> </ul>	Yes Yes
<b>Encoder signals, incremental encoder (symmetrical)</b>	
<ul style="list-style-type: none"> <li>• Input voltage</li> <li>• Input frequency, max.</li> </ul>	5 V difference signal (phys. RS 422) 1 MHz; for 10 m cable length; 0.5 MHz for 35 m cable length
<b>Encoder signals, absolute encoder (SSI)</b>	
<ul style="list-style-type: none"> <li>• Input signal</li> <li>• Clock frequency, max.</li> <li>• Cable length, shielded, max.</li> </ul>	5 V difference signal (phys. RS 422) 1.25 Mbit/s at 10 cable length (2.5 Mbit/s available soon) 250 m; At max. 156 kbit/s
<b>Drive interface</b>	
<b>Signal Input</b>	
<ul style="list-style-type: none"> <li>• Type</li> <li>• Function</li> </ul>	Drive interface step, signal input "READY 1" "Power section ready" where $U_i < 1 \text{ V}$ , $I_i = 2 \text{ mA}$
<b>Analog drive</b>	
<b>Setpoint signal</b>	
<ul style="list-style-type: none"> <li>— Rated voltage range</li> <li>— Output current</li> <li>— Cable length, max.</li> </ul>	-10 to +10V -3 to +3 mA 30 m
<b>Output controller enable</b>	
<ul style="list-style-type: none"> <li>— Switching voltage, max.</li> <li>— Switching current, max.</li> <li>— Switching capacity, max.</li> </ul>	50 V 1 A 30 VA
<b>Stepper drive</b>	
<ul style="list-style-type: none"> <li>• Differential output voltage, min.</li> <li>• Differential output voltage for signal "0", max.</li> <li>• Differential output voltage for signal "1", min.</li> <li>• Load resistance, min.</li> <li>• Output current, max.</li> <li>• Pulse frequency</li> <li>• Cable length, shielded, max.</li> </ul>	2 V; $R_L = 100 \text{ Ohm}$ 1.1 V; $I_o = 30 \text{ mA}$ 3.7 V; $I_o = -30 \text{ mA}$ 55 $\Omega$ 60 mA 200 kHz; 500 kHz available soon 35 m; 35 m with symm. transmission; 10 m with asymm. transmission
<b>Potential separation</b>	
<b>Potential separation digital inputs</b>	
<ul style="list-style-type: none"> <li>• Potential separation digital inputs</li> </ul>	Yes; Optocoupler
<b>Potential separation digital outputs</b>	
<ul style="list-style-type: none"> <li>• Potential separation digital outputs</li> </ul>	Yes; Optocoupler
<b>Ambient conditions</b>	
<b>Ambient temperature during operation</b>	
<ul style="list-style-type: none"> <li>• min.</li> <li>• max.</li> </ul>	0 °C 55 °C
<b>Ambient temperature during storage/transportation</b>	
<ul style="list-style-type: none"> <li>• min.</li> <li>• max.</li> </ul>	-40 °C 70 °C
<b>connection method</b>	
required front connector	1x 48-pin
<b>Dimensions</b>	
Width	50 mm
Height	290 mm
Depth	210 mm
<b>Weights</b>	
Weight, approx.	1 620 g

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last modified:

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