



SIEMENS

Data sheet

6ES7231-0HF22-0XA0



Figure similar

SIMATIC S7-200, ANALOG INPUT EM 231, FOR S7-22X CPU ONLY, 8 AI, 0-10V DC, MAX 2AE 0..20MA 12/11 BIT CONVERTER

Input current

from load voltage L+ (without load), max.	60 mA
from backplane bus 5 V DC, max.	20 mA

Power losses

Power loss, typ.	2 W
------------------	-----

Analog inputs

Number of analog inputs	8; Difference
permissible input voltage for voltage input (destruction limit), max.	30 V
permissible input current for current input (destruction limit), max.	40 mA

Input ranges

• Voltage	Yes
• Current	Yes; for channels 6 and 7 only
• Thermocouple	No
• Resistance thermometer	No
• Resistance	No

Input ranges (rated values), voltages

• 0 to +5 V	Yes
• Input resistance (0 to 5 V)	10 M Ω
• 0 to +10 V	Yes
• Input resistance (0 to 10 V)	10 M Ω
• -2.5 V to +2.5 V	Yes
• Input resistance (-2.5 V to +2.5 V)	10 M Ω



• -5 V to +5 V	Yes
• Input resistance (-5 V to +5 V)	10 MΩ
• -80 mV to +80 mV	No
Input ranges (rated values), currents	
• 0 to 20 mA	Yes; for channels 6 and 7 only
• Input resistance (0 to 20 mA)	10 MΩ
Input ranges (rated values), thermoelements	
• Type E	No
• Type J	No
• Type K	No
• Type N	No
• Type R	No
• Type S	No
• Type T	No
Input ranges (rated values), resistance thermometer	
• Cu 10	No
• Ni 10	No
• Ni 1000	No
• Ni 120	No
• Pt 100	No
• Pt 1000	No
• Pt 10000	No
• Pt 200	No
• Pt 500	No
Input ranges (rated values), resistors	
• 0 to 150 ohms	No
• 0 to 300 ohms	No
• 0 to 600 ohms	No
Thermocouple (TC)	
Temperature compensation	
— Parameterizable	No
Cable length	
• shielded, max.	100 m; to the sensor
Analog value creation	
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	12 bit
• Interference voltage suppression for interference frequency f1 in Hz	40 dB, DC up to 60 V for interference frequency
• Conversion time (per channel)	250 μs
Displayable conversion value range	



- | | |
|--------------------|--------------------|
| • bipolar signals | -32 000 to +32 000 |
| • unipolar signals | 0 to 32000 |

Interference voltage suppression for $f = n \times (f_1 \pm 1 \%)$, $f_1 =$ interference frequency

- | | |
|-----------------------------|------|
| • common mode voltage, max. | 12 V |
|-----------------------------|------|

Interrupts/diagnostics/status information

Diagnostics indication LED

- | | |
|---------------|------------|
| • Description | LED, EXT F |
|---------------|------------|

Potential separation

Galvanic isolation analog inputs

- | | |
|------------------------------------|----|
| • Galvanic isolation analog inputs | No |
|------------------------------------|----|

Connection method

Plug-in I/O terminals	No
-----------------------	----

Dimensions

Width	71.2 mm
Height	80 mm
Depth	62 mm

Weights

Weight, approx.	190 g
-----------------	-------

last modified:	23.04.2015
-----------------------	------------