SIEMENS

Data sheet 6ES7647-0KA01-0AA2

SIMATIC IOT2000 input/output Module, 5x DI 2x AI 2x DO,
ARDUINO Shield for SIMATIC IOT2020 and IOT2040

Installation type/mounting	
Mounting	On Arduino interface
Design	Plug-in card
Supply voltage	
Type of supply voltage	24 V DC
Digital inputs	
Number of digital inputs	5
Input voltage	
• Type of input voltage	DC
• for signal "0"	< 5 V DC
• for signal "1"	> 12 V DC
Input current	
• for signal "0", max. (permissible quiescent current)	0.9 mA
• for signal "1", typ.	2.1 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— at "0" to "1", max.	1.5 ms

— at "1" to "0", max.	1.5 ms
Digital outputs	
Type of digital output	transistor
Number of digital outputs	2
Short-circuit protection	Yes
Output voltage	
• Type of output voltage	DC
• permissible voltage at output, min.	0 V
• permissible voltage at output, max.	28.8 V
Output current	
• for signal "1" rated value	0.3 A
Parallel switching of two outputs	
• for uprating	No
Switching frequency	
• with resistive load, max.	10 Hz
• with inductive load, max.	0.5 Hz
Analog inputs	
Number of analog inputs	2
Input ranges	
• Voltage	Yes; 0 to 10V
• Current	Yes; 0 to 20 mA
• Thermocouple	No
• Resistance thermometer	No
• Resistance	No
Input ranges (rated values), voltages	
• 0 to +10 V	Yes
Input ranges (rated values), currents	
• 0 to 20 mA	Yes
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	9 bit
Integrated Functions	
Monitoring functions	
• Temperature monitoring	No
• Watchdog	No
• Status LEDs	No
• Fan	No
EMC	
Interference immunity against discharge of static electricity	

• Interference immunity against discharge of static electricity	±4 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2
Interference immunity against high-frequency electromagnetic fields	
• Interference immunity against high frequency radiation	10 V/m for 80 - 1000 MHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3; 1 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 150 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6
Interference immunity to cable-borne interference	
• Interference immunity on supply cables	±2 kV acc. to IEC 61000-4-4, burst; ±1 kV acc. to IEC 61000-4-5, surge symmetric; ±2 kV acc. to IEC 61000-4-5, surge asymmetric
• Interference immunity on signal cables >30m	±2 kV acc. to IEC 61000-4-5, surge, length > 30 m
• Interference immunity on signal cables < 30m	±2 kV in accordance with IEC 61000-4-4, burst, length > 30 m
Interference immunity against voltage surge	
• asymmetric interference	±2 kV acc. to IEC 61000-4-5, surge asymmetric
• symmetric interference	±1 kV acc. to IEC 61000-4-5, surge symmetric
Interference immunity to magnetic fields	
• Interference immunity to magnetic fields at 50 Hz	100 A/m; to IEC 61000-4-8
Emission of conducted and non-conducted interference	
• Interference emission via line/AC current cables	EN 61000-6-4:2007 +A1:2011

Degree and class of protection

IP (at the front)	n.a.

Standards, approvals, certificates

Approval	CE (industry), UL, cULus
CE mark	Yes
UL approval	Yes
cULus	Yes
KC approval	Yes; For use inside SIMATIC IoT2040
EMC	CE, EN 61000-6-4:2007 +A1:2011, EN 61000-6-2:2005, EN 61000-6-3:2007 +A1:2011, EN 61000-6-1:2007

Ambient conditions

Ambient temperature during operation	
• Ambient temperature during operation	0 °C to 50 °C
• min.	0 °C
• max.	50 °C
Relative humidity	
• Relative humidity	Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation)
Shock testing	
• Shock load during operation	Tested according to IEC 60068-2-27: 150 m/s², 11 ms

Operating systems

without operating system	Yes

Dimensions	
Width	75 mm
Height	57 mm
Depth	32 mm

last modified: 10/13/2017