## **SIEMENS**

## Datasheet

## 6ES7131-6TF00-0CA0



SIMATIC ET 200SP, DIGITAL INPUT MODULE, DI 8X NAMUR HIGH FEATURE, FITS TO BU-TYPE A0, COLOR CODE CC01, CHANNEL DIAGNOSIS

## Product type designation

General information		
Usable BaseUnits	BU type A0	
Product function		
● I&M data	Yes; I&M0 to I&M3	
Engineering with		
<ul> <li>STEP 7 TIA Portal can be configured/integrated as of version</li> </ul>	V13 / V13	
<ul> <li>STEP 7 can be configured/integrated as of version</li> </ul>	V5.5 SP3 / -	
<ul> <li>PROFIBUS as of GSD version/GSD revision</li> </ul>	GSD Revision 5	
<ul> <li>PROFINET as of GSD version/GSD revision</li> </ul>	V2.3	
Operating mode		
Supply voltage		
Rated value (DC)	24 V	
permissible range, lower limit (DC)	19.2 V	
permissible range, upper limit (DC)	28.8 V	
Reverse polarity protection	Yes	
Encoder supply		
Number of outputs	8	
short-circuit protection	Yes	
Output current		
24 V encoder supply		
Power losses		
Towerlosses		

Power loss, typ.	1.5 W
Address area	
Address space per module	
<ul> <li>Address space per module, max.</li> </ul>	1 byte; + 1 byte for QI information
Digital inputs	
Number of digital inputs	8
Digital inputs, configurable	Yes
Туре	NAMUR
Pulse extension	Yes; 0.5 s, 1 s, 2 s
Edge evaluation	Yes; rising edge, falling edge, edge change
Signal change flutter	Yes; 2 to 32 signal changes
Flutter observation window	Yes; 0.5 s, 1 s to 100 s in 1-s steps
Input voltage	
<ul> <li>Type of input voltage</li> </ul>	DC
<ul> <li>Rated value (DC)</li> </ul>	8.2 V
Input current	
for 10 k switched contact	
— for signal "0"	0.35 to 1.2 mA
— for signal "1"	2.1 to 7 mA
for unswitched contact	
— for signal "0", max. (permissible quiescent current)	0.5 mA
— for signal "1"	typ. 8 mA
for NAMUR encoders	
— for signal "0"	0.35 to 1.2 mA
— for signal "1"	2.1 to 7 mA
Input delay (for rated value of input voltage)	
<ul> <li>Tolerated changeover time for changeover contacts</li> </ul>	300 ms
for standard inputs	
for interrupt inputs	
for counter/technological functions	
for NAMUR inputs	
— at "0" to "1", max.	12 ms
— at "1" to "0", max.	12 ms
Cable length	
• Cable length, shielded, max.	200 m
Encoder	
Connectable encoders	
<ul> <li>NAMUR encoder/changeover contact according to EN 60947</li> </ul>	Yes

<ul> <li>Single contact / changeover contact connected with 10 k0</li> <li>Interrupts/cliagnostics/status information</li> <li>Alarms</li> <li>Diagnostic alarm</li> <li>Hardware interrupt</li> <li>Yes; channel by channel</li> <li>Hardware interrupt</li> <li>Yes</li> <li>Diagnostic information readable</li> <li>Monitoring the supply voltage</li> <li>Wire break</li> <li>Short circuit</li> <li>Yes</li> <li>Short circuit</li> <li>Yes</li> <li>Diagnostic information readable</li> <li>Wire break</li> <li>Short circuit</li> <li>Yes</li> <li>Short circuit</li> <li>Yes</li> <li>Short circuit</li> <li>Yes</li> <li>Diagnostic information readable</li> <li>Wire break</li> <li>Yes</li> <li>Short circuit</li> <li>Yes</li> <li>Yes</li> <li>Short circuit</li> <li>Yes</li> <li></li></ul>	<ul> <li>Single contact / changeover contact unconnected</li> </ul>	Yes
Alarms       Yes: channel by channel <ul> <li>Hardware interrupt</li> <li>Yes: Parameterizable, channels 0 to 7</li> <li>Diagnostic information readable</li> <li>Yes</li> <li>Monitoring the supply voltage</li> <li>Yes</li> <li>Monitoring the supply voltage</li> <li>Yes</li> <li>Group error</li> <li>Yes</li> <li>Or channel status display</li> <li>Yes; Green PWR LED</li> <li>Yes; Green PWR LED</li> <li>Yes; Green LED</li> <li>Yes; Green LED</li> <li>Yes; Green LED</li> <li>Yes; Red LED</li> <li>Yes; Red LED</li> <li>Yes; Red LED</li> <li>Yes; Green LED</li> <li>Yes; Green LED</li> <li>Yes; Red LED</li> <li>Yes</li> <li>Ye</li></ul>	<ul> <li>Single contact / changeover contact connected</li> </ul>	Yes
• Diagnostic alarm       Yes; channel by channel         • Hardware interrupt       Yes; Parameterizable, channels 0 to 7         Diagnostic messages       •         • Monitoring the supply voltage       Yes         • Monitoring the supply voltage       Yes         • Wire break       Yes         • Short circuit       Yes         • Group error       Yes         • Monitoring of the supply voltage (PWR-LED)       Yes; green PWR LED         • Channel status display       Yes; Green LED         • for channel diagnostics       Yes; green PWR LED         • for channel diagnostics       Yes; green/red DIAG LED         • for module diagnostics       Yes; green/red DIAG LED         • between the channels       No         • between the channels       Yes         • between the channels and the backplane bus       Yes         • between the channels and the supply voltage of the electronics       Yes         Permissible potential difference       Yes         between difference       Yes         Detween difference       Yes	Interrupts/diagnostics/status information	
Hardware interrupt     Yes; Parameterizable, channels 0 to 7       Diagnostic messages     Yes       Diagnostic information readable     Yes       Wire break     Yes       Wire break     Yes       Short dircuit     Yes       Group error     Yes       Diagnostics indication LED     Yes       Other of the supply voltage (PWR-LED)     Yes; green PWR LED       Channel status display     Yes; Green LED       Yes; Green LED     Yes; Red LED       for channel diagnostics     Yes; green/red DIAG LED       Electrical isolation channels     Yes       between the channels     No       between the channels and the backplane bus     Yes       between the channels and the supply voltage of the electronics     Yes       Permissible potential difference     Yes       between different circuits     75 V DC/60 V AC (base isolation)       Isolation     Solation       Ambient conditions     Relative humidity       Relative humidity     Resistance       Connection method     Image: Connection method       ET-Connection     Image: Connection       Dimensions     Yes       Width     15 mm	Alarms	
Diagnostic messages                • Diagnostic information readable         Yes                • Monitoring the supply voltage         Yes                • Wire break         Yes                • Nor torcuit         Yes                • Oroup error         Yes           Diagnostics indication LED         Yes; green PWR LED                • Monitoring of the supply voltage (PWR-LED)         Yes; Green LED                • Annel status display         Yes; Green LED                • for channel diagnostics         Yes; green/red DIAG LED                • for orbule diagnostics         Yes; green/red DIAG LED                • Detween the channels         No                • between the channels and the backplane bus         Yes                • between the channels and the supply voltage of the electronics         Yes                • between difference         Yes	Diagnostic alarm	Yes; channel by channel
<ul> <li>Diagnostic information readable</li> <li>Yes</li> <li>Monitoring the supply voltage</li> <li>Yes</li> <li>Short circuit</li> <li>Yes</li> <li>Short circuit</li> <li>Yes</li> <li>Group error</li> <li>Yes</li> </ul> <li>Diagnostics indication LED</li> <li>Monitoring of the supply voltage (PWR-LED)</li> <li>Yes; green PWR LED</li> <li>Channel status display</li> <li>Yes; Green LED</li> <li>Yes; Green LED</li> <li>Yes; green/red DIAG LED</li> <li>Calvanic isolation</li> <li>Electrical isolation channels</li> <li>between the channels and the backplane bus</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Ves</li> <li>Yes</li> Permissible potential difference between different circuits <ul> <li>75 V DC/60 V AC (base isolation)</li> </ul> Isolation Isolation Connection method Connection method Etended ambient conditions Relative humidity Resistance Connection method ET-Connection Dimensions With <ul> <li>15 mm</li> </ul>	Hardware interrupt	Yes; Parameterizable, channels 0 to 7
• Monitoring the supply voltage     Yes       • Wire break     Yes       • Short circuit     Yes       • Group error     Yes       Diagnostics indication LED     Yes; green PWR LED       • Channel status display     Yes; Green LED       • for channel diagnostics     Yes; green/red DIAG LED       • between the channels     No       • between the channels and the backplane bus     Yes       • between the channels and the supply voltage of the electronics     Yes       Permissible potential difference     Yes       between different circuits     75 V DC/60 V AC (base isolation)       Isolation     Tor V DC (type test)       Ambient conditions     Relative humidity       Relative humidity     Resistance       Connection method     Image: Statuse       ET-Connection     Image: Statuse       With     15 mm	Diagnostic messages	
• Wire break       Yes         • Short circuit       Yes         • Group error       Yes         Diagnostics indication LED       Yes; green PWR LED         • Monitoring of the supply voltage (PWR-LED)       Yes; Green PWR LED         • Channel status display       Yes; Green LED         • Channel status display       Yes; Red LED         • for module diagnostics       Yes; green/red DIAG LED         • for module diagnostics       Yes; green/red DIAG LED         Calvanic isolation       Electrical isolation channels         • between the channels       No         • between the channels and the backplane bus       Yes         • between the channels and the supply voltage of the electronics       Yes         Permissible potential difference       Yes         between different circuits       75 V DC/60 V AC (base isolation)         Isolation       Isolation         Isolation       Yes         Ambient conditions       Relative humidity         Relative humidity       Resistance         Connection method       Image: Second Conditions         With       15 mm	<ul> <li>Diagnostic information readable</li> </ul>	Yes
• Short circuit     Yes       • Short circuit     Yes       • Group error     Yes       Diagnostics indication LED     Yes; green PWR LED       • Monitoring of the supply voltage (PWR-LED)     Yes; Green LED       • Channel status display     Yes; Green LED       • for nodule diagnostics     Yes; green/red DIAG LED       • for module diagnostics     Yes; green/red DIAG LED       • for module diagnostics     Yes; green/red DIAG LED       • between the channels     No       • between the channels and the backplane bus     Yes       • between the channels and the supply voltage of the electronics     Yes       Permissible potential difference     Yes       between different circuits     75 V DC/60 V AC (base isolation)       Isolation     Isolation       Isolation teacked with     707 V DC (type test)       Ambient conditions     Relative humidity       Relative humidity     Resistance       Connection method     Image:	<ul> <li>Monitoring the supply voltage</li> </ul>	Yes
Order cents     Yes       Diagnostics indication LED     •       • Monitoring of the supply voltage (PWR-LED)     Yes; green PWR LED       • Channel status display     Yes; Green LED       • for channel diagnostics     Yes; Red LED       • for module diagnostics     Yes; green/red DIAG LED       Calvanic isolation     Electrical isolation channels       • between the channels     No       • between the channels and the backplane bus     Yes       • between the channels and the supply voltage of the electronics     Yes       Permissible potential difference     Yes       between different circuits     75 V DC/60 V AC (base isolation)       Isolation     Isolation       Ambient conditions     Relative humidity       Relative humidity     Resistance       Connection method     ET-Connection       ET-Connection     15 mm	• Wire break	Yes
Diagnostics indication LED     Yes; green PWR LED       • Monitoring of the supply voltage (PWR-LED)     Yes; Green LED       • Channel status display     Yes; Green LED       • for channel diagnostics     Yes; green/red DIAG LED       • for module diagnostics     Yes; green/red DIAG LED       • for module diagnostics     Yes; green/red DIAG LED       • between the channels     No       • between the channels and the backplane bus     Yes       • between the channels and the supply voltage of the electronics     Yes       • between different circuits     75 V DC/60 V AC (base isolation)       Isolation     Isolation       Isolation checked with     707 V DC (type test)       Ambient conditions     Relative humidity       Resistance     Connection method       ET-Connection     ET-Connection       Vith     15 mm	Short circuit	Yes
<ul> <li>Monitoring of the supply voltage (PWR-LED) Yes; green PWR LED</li> <li>Channel status display Yes; Green LED</li> <li>for channel diagnostics Yes; Red LED</li> <li>for module diagnostics Yes; green/red DIAG LED</li> </ul> Galvanic isolation           Electrical isolation channels         No           • between the channels and the backplane bus         Yes           • between the channels and the supply voltage of the electronics         Yes           Permissible potential difference         Yes           between different circuits         75 V DC/60 V AC (base isolation)           Isolation         Isolation           Isolation checked with         707 V DC (type test)           Ambient conditions         Relative humidity           Resistance         Extended ambient conditions           Permissione         Isolation	Group error	Yes
<ul> <li>Channel status display</li> <li>Yes; Green LED</li> <li>for channel diagnostics</li> <li>Yes; Red LED</li> <li>for module diagnostics</li> <li>Yes; green/red DIAG LED</li> </ul> Calvanic isolation           Electrical isolation channels         Yes; green/red DIAG LED           Electrical isolation channels         No           • between the channels and the backplane bus         Yes           • between the channels and the backplane bus         Yes           • between the channels and the backplane bus         Yes           • between the channels and the supply voltage of the electronics         Yes           Permissible potential difference         Yes           between different circuits         75 V DC/60 V AC (base isolation)           Isolation         Isolation           Isolation checked with         707 V DC (type test)           Ambient conditions         Relative humidity           Relative humidity         Resistance           Connection method         ET-Connection           Dimensions         Vidth	Diagnostics indication LED	
<ul> <li>for channel diagnostics</li> <li>for module diagnostics</li> <li>Yes; green/red DIAG LED</li> <li>Calvanic isolation</li> <li>Electrical isolation channels</li> <li>between the channels</li> <li>between the channels and the backplane bus</li> <li>between the channels and the supply voltage of the electronics</li> <li>Permissible potential difference</li> <li>between different circuits</li> <li>75 V DC/60 V AC (base isolation)</li> <li>Isolation</li> <li>Isolation checked with</li> <li>707 V DC (type test)</li> <li>Ambient conditions</li> <li>Relative humidity</li> <li>Resistance</li> <li>Connection method</li> <li>ET-Connection</li> <li>Dimensions</li> <li>Width</li> <li>15 mm</li> </ul>	<ul> <li>Monitoring of the supply voltage (PWR-LED)</li> </ul>	Yes; green PWR LED
• for module diagnostics       Yes; green/red DIAG LED         Galvanic isolation       Electrical isolation channels         • between the channels       No         • between the channels and the backplane bus       Yes         • between the channels and the supply voltage of the electronics       Yes         Permissible potential difference       Yes         between different circuits       75 V DC/60 V AC (base isolation)         Isolation       Isolation checked with         Isolation checked with       707 V DC (type test)         Ambient conditions       Extended ambient conditions         Relative humidity       Resistance         Connection method       ET-Connection         Dimensions       Vidth         Width       15 mm	Channel status display	Yes; Green LED
Galvanic isolation         Electrical isolation channels <ul> <li>between the channels and the backplane bus</li> <li>between the channels and the supply voltage of the electronics</li> </ul> Yes         Permissible potential difference         between different circuits       75 V DC/60 V AC (base isolation)         Isolation         Isolation checked with       707 V DC (type test)         Ambient conditions         Operating temperature       Extended ambient conditions         Relative humidity       Resistance         Connection method         ET-Connection       Dimensions         Width       15 mm	<ul> <li>for channel diagnostics</li> </ul>	Yes; Red LED
Electrical isolation channels       No         • between the channels and the backplane bus       Yes         • between the channels and the supply voltage of the electronics       Yes         Permissible potential difference       Yes         between different circuits       75 V DC/60 V AC (base isolation)         Isolation       Isolation         Isolation checked with       707 V DC (type test)         Ambient conditions       Permissible potential difference         Extended ambient conditions       Relative humidity         Relative humidity       Resistance         Connection method       ET-Connection         Dimensions       15 mm	<ul> <li>for module diagnostics</li> </ul>	Yes; green/red DIAG LED
• between the channels       No         • between the channels and the backplane bus       Yes         • between the channels and the supply voltage of the electronics       Yes         Permissible potential difference       Yes         between different circuits       75 V DC/60 V AC (base isolation)         Isolation       Isolation checked with         Ambient conditions       707 V DC (type test)         Ambient conditions       Extended ambient conditions         Relative humidity       Resistance         Connection method       ET-Connection         Dimensions       15 mm		
• between the channels and the backplane bus         Yes           • between the channels and the supply voltage of the electronics         Yes           Permissible potential difference         Yes           between different circuits         75 V DC/60 V AC (base isolation)           Isolation         Isolation           Isolation checked with         707 V DC (type test)           Ambient conditions         Extended ambient conditions           Relative humidity         Resistance           Connection method         ET-Connection           Dimensions         15 mm	Electrical isolation channels	
• between the channels and the supply voltage of the electronics      Permissible potential difference     between different circuits      75 V DC/60 V AC (base isolation)      Isolation      Isolation checked with      707 V DC (type test)      Ambient conditions      Operating temperature      Extended ambient conditions      Relative humidity      Resistance      Connection method      ET-Connection      Width      15 mm	• between the channels	No
the electronics          Permissible potential difference         between different circuits       75 V DC/60 V AC (base isolation)         Isolation         Isolation checked with       707 V DC (type test)         Ambient conditions         Operating temperature         Extended ambient conditions         Relative humidity         Resistance         Connection method         ET-Connection         Dimensions         Width       15 mm	<ul> <li>between the channels and the backplane bus</li> </ul>	Yes
between different circuits       75 V DC/60 V AC (base isolation)         Isolation       Isolation checked with         Isolation checked with       707 V DC (type test)         Ambient conditions       Operating temperature         Extended ambient conditions       Relative humidity         Resistance       Connection method         ET-Connection       Dimensions         Width       15 mm		
between different circuits       75 V DC/60 V AC (base isolation)         Isolation       Isolation checked with         Isolation checked with       707 V DC (type test)         Ambient conditions       Operating temperature         Extended ambient conditions       Relative humidity         Resistance       Connection method         ET-Connection       Dimensions         Width       15 mm		Yes
Isolation checked with       707 V DC (type test)         Ambient conditions       Operating temperature         Extended ambient conditions       Relative humidity         Relative humidity       Resistance         Connection method       Image: Connection         Dimensions       15 mm	the electronics	Yes
Isolation checked with       707 V DC (type test)         Ambient conditions       Operating temperature         Extended ambient conditions       Relative humidity         Relative humidity       Resistance         Connection method       Image: Connection         Dimensions       15 mm	the electronics Permissible potential difference	
Ambient conditions       Operating temperature       Extended ambient conditions       Relative humidity       Resistance       Connection method       ET-Connection       Dimensions       Width     15 mm	the electronics Permissible potential difference between different circuits	
Operating temperature         Extended ambient conditions         Relative humidity         Resistance         Connection method         ET-Connection         Dimensions         Width       15 mm	the electronics Permissible potential difference between different circuits Isolation	75 V DC/60 V AC (base isolation)
Extended ambient conditions         Relative humidity         Resistance         Connection method         ET-Connection         Dimensions         Width       15 mm	the electronics Permissible potential difference between different circuits Isolation	75 V DC/60 V AC (base isolation)
Relative humidity         Resistance         Connection method         ET-Connection         Dimensions         Width       15 mm	the electronics          Permissible potential difference         between different circuits         Isolation         Isolation checked with         Ambient conditions	75 V DC/60 V AC (base isolation)
Resistance         Connection method         ET-Connection         Dimensions         Width       15 mm	the electronics          Permissible potential difference         between different circuits         Isolation         Isolation checked with         Ambient conditions         Operating temperature	75 V DC/60 V AC (base isolation)
Connection method         ET-Connection         Dimensions         Width       15 mm	the electronics          Permissible potential difference         between different circuits         Isolation         Isolation checked with         Ambient conditions         Operating temperature         Extended ambient conditions	75 V DC/60 V AC (base isolation)
ET-Connection       Dimensions       Width       15 mm	the electronics          Permissible potential difference         between different circuits         Isolation         Isolation checked with         Ambient conditions         Operating temperature         Extended ambient conditions	75 V DC/60 V AC (base isolation)
Dimensions       Width   15 mm	the electronics          Permissible potential difference         between different circuits         Isolation         Isolation checked with         Ambient conditions         Operating temperature         Extended ambient conditions         Relative humidity	75 V DC/60 V AC (base isolation)
Width 15 mm	the electronics          Permissible potential difference         between different circuits         Isolation         Isolation checked with         Ambient conditions         Operating temperature         Extended ambient conditions         Relative humidity         Resistance         Connection method	75 V DC/60 V AC (base isolation)
	the electronics          Permissible potential difference         between different circuits         Isolation         Isolation checked with         Ambient conditions         Operating temperature         Extended ambient conditions         Relative humidity         Resistance         Connection method	75 V DC/60 V AC (base isolation)
Weights	the electronics          Permissible potential difference         between different circuits         Isolation         Isolation checked with         Ambient conditions         Operating temperature         Extended ambient conditions         Relative humidity         Resistance         Connection method         ET-Connection         Dimensions	75 V DC/60 V AC (base isolation) 707 V DC (type test)
	the electronics          Permissible potential difference         between different circuits         Isolation         Isolation checked with         Ambient conditions         Operating temperature         Extended ambient conditions         Relative humidity         Resistance         Connection method         ET-Connection	75 V DC/60 V AC (base isolation) 707 V DC (type test)

Weight, approx.	
last modified:	

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