## **SIEMENS**

## Data sheet

## 6ES7131-6TF00-0CA0

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



DI 8xNAMUR HF
V1.0
Yes
BU type A0
CC01
Yes; I&M0 to I&M3
V13 / V13
V5.5 SP3 / -
GSD Revision 5
GSDML V2.3
Yes
No
No

• MSI	No
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
24 V encoder supply	
• 24 V	No
Short-circuit protection	No
Power loss	
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
Hardware configuration	
Selection of BaseUnit for connection variants	
1-wire connection	BU type A0
• 2-wire connection	BU type A0
• 3-wire connection	BU type A0 + external terminals
• 4-wire connection	BU type A0 + external terminals
Digital inputs	
Number of digital inputs	8
Digital inputs, parameterizable	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	

	<b>4</b> • • • • • • • • • • • • • •	0.5	
for NAMUR encoders       0.35 to 1.2 mA         - 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)       300 ms         • tolerated changeover time for changeover contacts       300 ms         for standard inputs       No         - parameterizable       No         for NAMUR inputs       12 ms         - at "0" to "1", max.       12 ms         Cable length       200 m         • shielded, max.       200 m         Encoder       Connectable encoders         • NAMUR encoder/changeover contact according to EN 60947       Yes         • Single contact / changeover contact unconnected       Yes         • Single contact / changeover contact connected with 10 kQ       Yes         • Single contact / changeover contact connected with 10 kQ       No         • Diagnostics /status information       Yes         Diagnostics information       Yes         • Diagnostic information readable       Yes         • Monitoring of en	<ul> <li>for signal "0", max. (permissible quiescent current)</li> </ul>	0.5 mA	
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)     300 ms       - tolerated changeover time for changeover contacts     300 ms       for standard inputs     -       - parameterizable     No       for NAMUR Inputs     -       - at '0" to '1", max.     12 ms       - at '0" to '1", max.     12 ms       - at '0" to '1", max.     12 ms       - at '1" to '0", max.     200 m       Encoder     -       Connectable encoders     Ves       • NAMUR encoder/changeover contact according to EN 60947     Yes       • Single contact / changeover contact unconnected with 10 kO     Yes       Inscriptional for the main of the main	— for signal "1"	typ. 8 mA	
for signal "1"     2.1 to 7 mA       Input delay (for rated value of input voltage)     300 ms       • tolerated changeover time for changeover contacts     300 ms       for standard inputs     parameterizable       parameterizable     No       for NAMUR inputs     12 ms       at "0" to "1", max.     12 ms       at "1" to "0", max.     12 ms       at "1" to "0", max.     200 m       Encoder       Connectable encoders       Ves       NoMulticaccolspan="2">Ves       NoMulticaccolspan="2">No       Encoder       Connectable encoders       Ves       Ves       NoMulticaccolspan="2">No       No       Encoder       Ves       Ves <td cols<="" td=""><td>for NAMUR encoders</td><td></td></td>	<td>for NAMUR encoders</td> <td></td>	for NAMUR encoders	
Input deal (for rated value of input voltage)         300 ms           • tolerated changeover time for changeover contacts         300 ms           for standard inputs         -           parameterizable         No           for NAMUR inputs         12 ms           at "0" to "1", max.         12 ms           - at "1" to "0", max.         12 ms           Cable length         200 m           • shielded, max.         200 m           Encoder         Connectable encoders           • NAMUR encoder/changeover contact according to EN 60947         Yes           • Single contact / changeover contact connected         Yes           • Single contact / changeover contact connected with 10 kΩ         No           to terminal)         No           Interrupts/diagnostics/status information         No           Diagnostic alarm         Yes; Parameterizable, channels 0 to 7           Diagnostic information readable         Yes           • Monitoring the supply voltag	— for signal "0"	0.35 to 1.2 mA	
• tolerated changeover time for changeover contacts         300 ms           for standard inputs         No           - parameterizable         No           for NAMUR inputs         12 ms           - at "0" to "1", max.         12 ms           - at "1" to "0", max.         200 m           Cable length         200 m           Cable length         200 m           Encoder         Connectable encoders           • NAMUR encoder/changeover contact according to EN 60947         Yes           • Single contact / changeover contact with 10 kΩ         Yes           • Single contact / changeover contact connected with 10 kΩ         Yes           Isochronous operation (application synchronized up to terminal)         No           Interrupts/diagnostics/status information         No           Diagnostic alarm         Yes; Parameterizable, channels 0 to 7           Diagnostic information readable         Yes           • Monitoring the supply voltage         Yes           •	— for signal "1"	2.1 to 7 mA	
Instance on large of a line of a lange of all of	Input delay (for rated value of input voltage)		
parameterizable       No         for NAMUR inputs       12 ms        at "0" to "1", max.       12 ms        at "1" to "0", max.       12 ms         Cable length       200 m         eshielded, max.       200 m         Encoder       Connectable encoders         Connectable encoders       Yes         • NAMUR encoder/changeover contact according to EN 60947       Yes         • Single contact / changeover contact unconnected       Yes         • Single contact / changeover contact connected with 10 kΩ       Yes         Isochronous operation (application synchronized up to terminal)       No         Interrupts/diagnostics/status information       No         Diagnostic alarm       Yes; channel by channel         • Hardware interrupt       Yes; Parameterizable, channels 0 to 7         Diagnostic information readable       Yes         • Diagnostic information readable       Yes         • Diagnostic information readable       Yes         • Monitoring the supply voltage       Yes; channel by channel         • Monitoring of encoder power supply       Yes; channel by channel         • Monitoring of encoder power supply       Yes; channel by channel         • Monitoring of encoder power supply       Yes; channel by channel		300 ms	
for NAWUR inputs        at "0" to "1", max.       12 ms        at "1" to "0", max.       12 ms         Cable length       .         • shielded, max.       200 m         Encoder       .         Connectable encoders       Yes         • NAMUR encoder/changeover contact according to EN 60947       Yes         • Single contact / changeover contact unconnected       Yes         • Single contact / changeover contact connected with 10 kΩ       Yes         Isochronous operation (application synchronized up to terminal)       No         Interrupts/diagnostics/status information       .         Diagnostic alarm       Yes; channel by channel         • Diagnostic alarm       Yes         • Diagnostic messages       .         • Diagnostic information readable       Yes         • Diagnostic formation readable       Yes         • Diagnostic formation readable       Yes         • Diagnostic information readable       Yes         • Diagnostic formation readable       Yes         • Diagnostic information readable       Yes	for standard inputs		
at "0" to "1", max.       12 ms         at "1" to "0", max.       12 ms         Cable length       .         • shielded, max.       200 m         Encoder         Connectable encoders         • NAMUR encoder/changeover contact according to EN 60947       Yes         • Single contact / changeover contact unconnected       Yes         • Single contact / changeover contact connected with 10 kΩ       Yes         Isochronous operation (application synchronized up to terminal)       No         Interrupts/diagnostics/status information       No         Diagnostic alarm       Yes; channel by channel         • Diagnostic alarm       Yes; Parameterizable, channels 0 to 7         Diagnostic messages       -         • Diagnostic information readable       Yes         • Diagnostic nessages       -         • Diagnostic nessages       -         • Diagnostic information readable       Yes         • Diagnostic information readable	— parameterizable	No	
	for NAMUR inputs		
Cable length       200 m         Encoder       200 m         Connectable encoders       Yes         • NAMUR encoder/changeover contact according to EN 60947       Yes         • Single contact / changeover contact unconnected       Yes         • Single contact / changeover contact connected with 10 kΩ       Yes         Isochronous mode       Yes         Isochronous operation (application synchronized up to terminal)       No         Interrupts/diagnostics/status information       No         Diagnostic alarm       Yes; channel by channel         • Hardware interrupt       Yes; Parameterizable, channels 0 to 7         Diagnostic information readable       Yes         • Diagnostic information readable       Yes         • Diagnostic information readable       Yes; Parameterizable, channels 0 to 7         Diagnostic information readable       Yes         • Diagnostic information readable       Yes         • Monitoring the supply voltage       Yes         • Monitoring of encoder power supply       Yes; channel by channel         • Wire-break       Yes; channel by channel         • Short-circuit       Yes; channel by channel         • Short-circuit       Yes; channel by channel         • Group error       Yes	— at "0" to "1", max.	12 ms	
• shielded, max.       200 m         Encoder       Connectable encoders         • NAMUR encoder/changeover contact according to EN 60947       Yes         • Single contact / changeover contact unconnected       Yes         • Single contact / changeover contact unconnected       Yes         • Single contact / changeover contact connected       Yes         Isochronous operation (application synchronized up to terminal)       No         Interrupts/diagnostics/status information       No         Diagnostics       Yes         Alarms       Ves; channel by channel         • Diagnostic information readable       Yes; Parameterizable, channels 0 to 7         Diagnostic information readable       Yes         • Monitoring the supply voltage       Yes         • Monitoring of encoder power supply       Yes; channel by channel	— at "1" to "0", max.	12 ms	
Encoder         Connectable encoders         • NAMUR encoder/changeover contact according to EN 60947         • Single contact / changeover contact unconnected         • Single contact / changeover contact connected with 10 kΩ         Isochronous mode         Isochronous mode         Isochronous operation (application synchronized up to terminal)         Interrupts/diagnostics/status information         Diagnostics       Yes         Alarms         • Diagnostic information readable       Yes; channel by channel         • Hardware interrupt       Yes; Parameterizable, channels 0 to 7         Diagnostic information readable       Yes         • Diagnostic information readable       Yes; channel by channel         • Diagnostic information readable       Yes; channel by channel         • Diagnostic information readable       Yes         • Monitoring the supply voltage       Yes         • Monitoring of encoder power supply       Yes; channel by channel         • Wire-break       Yes; channel by channel         • Short-circuit       Yes; channel by channel         • Group error       Yes	Cable length		
Connectable encoders <ul> <li>NAMUR encoder/changeover contact according to EN 60947</li> <li>Single contact / changeover contact unconnected</li> <li>Single contact / changeover contact connected Yes</li> <li>Single contact / changeover contact connected Yes</li> </ul> Yes           • Single contact / changeover contact connected with 10 kΩ             Yes           Isochronous mode           Isochronous operation (application synchronized up to terminal)         No           Interrupts/diagnostics/status information           Diagnostics         Yes           Alarms <ul> <li>Diagnostic alarm</li> <li>Hardware interrupt</li> <li>Yes; Parameterizable, channel Ves; Parameterizable, channels 0 to 7</li> </ul> Diagnostic information readable         Yes <ul> <li>Monitoring the supply voltage</li> <li>parameterizable</li> <li>Monitoring of encoder power supply</li> <li>Yes; channel by channel</li> <li>Wire-break</li> <li>Short-circuit</li> <li>Yes; channel by channel</li> <li>Yes; channel by channel</li> <li>Yes; channel by channel</li> <li>Short-circuit</li> <li>Yes; channel by channel</li> <li>Yes; channel by channel</li> <li>Short-circuit</li> <li>Yes; channel by channel</li> <li>Yes; channel by channel</li> </ul>	<ul> <li>shielded, max.</li> </ul>	200 m	
• NAMUR encoder/changeover contact according to EN 60947       Yes         • Single contact / changeover contact unconnected       Yes         • Single contact / changeover contact connected with 10 kΩ       Yes         Isochronous mode       Yes         Isochronous operation (application synchronized up to terminal)       No         Interrupts/diagnostics/status information       No         Diagnostics       Yes         • Diagnostic alarm       Yes; channel by channel         • Hardware interrupt       Yes; Parameterizable, channels 0 to 7         Diagnostic information readable       Yes         • Diagnostic information readable       Yes; Parameterizable, channels 0 to 7         Diagnostic information readable       Yes         • Diagnostic information readable       Yes         • Diagnostic information readable       Yes         • Monitoring the supply voltage       Yes         • Monitoring of encoder power supply       Yes; channel by channel         • Wire-break       Yes; channel by channel         • Short-circuit       Yes; channel by channel         • Group error       Yes	Encoder		
according to EN 60947       A         • Single contact / changeover contact unconnected       Yes         • Single contact / changeover contact connected with 10 kΩ       Yes         Isochronous mode       Yes         Isochronous operation (application synchronized up to terminal)       No         Interrupts/diagnostics/status information       No         Diagnostics       Yes         Alarms       Yes; channel by channel         • Diagnostic information readable       Yes; Parameterizable, channels 0 to 7         Diagnostic information readable       Yes         • Monitoring the supply voltage       Yes         • Monitoring of encoder power supply       Yes; channel by channel         • Wire-break       Yes; channel by channel         • Short-circuit       Yes; channel by channel         • Group error       Yes	Connectable encoders		
unconnected       Yes         single contact / changeover contact connected with 10 kΩ       Yes         Isochronous operation (application synchronized up to terminal)       No         Interrupts/diagnostics/status information       No         Diagnostics       Yes         Alarms       Yes; channel by channel         • Diagnostic alarm       Yes; channel by channel         • Hardware interrupt       Yes; Parameterizable, channels 0 to 7         Diagnostic information readable       Yes         • Diagnostic information readable       Yes         • Diagnostic information readable       Yes         • Monitoring the supply voltage       Yes         • Monitoring of encoder power supply       Yes; channel by channel         • Wire-break       Yes; channel by channel         • Short-circuit       Yes; channel by channel         • Group error       Yes	-	Yes	
with 10 kΩ         Isochronous mode         Isochronous operation (application synchronized up to terminal)       No         Interrupts/diagnostics/status information         Diagnostics       Yes         Alarms       Yes; channel by channel         • Diagnostic alarm       Yes; channel by channel         • Hardware interrupt       Yes; Parameterizable, channels 0 to 7         Diagnostic information readable       Yes         • Diagnostic information readable       Yes         • Diagnostic information readable       Yes         • Monitoring the supply voltage       Yes         • Monitoring of encoder power supply       Yes; channel by channel         • Wire-break       Yes; channel by channel         • Short-circuit       Yes; channel by channel         • Group error       Yes		Yes	
Isochronous operation (application synchronized up to terminal)       No         Interrupts/diagnostics/status information         Diagnostics       Yes         Alarms       Yes; channel by channel         • Diagnostic alarm       Yes; channel by channel         • Hardware interrupt       Yes; Parameterizable, channels 0 to 7         Diagnostic messages       Yes         • Diagnostic information readable       Yes         • Diagnostic information readable       Yes         • Monitoring the supply voltage       Yes         — parameterizable       Yes         • Monitoring of encoder power supply       Yes; channel by channel         • Wire-break       Yes; channel by channel         • Short-circuit       Yes; channel by channel         • Group error       Yes		Yes	
Isochronous operation (application synchronized up to terminal)       No         Interrupts/diagnostics/status information         Diagnostics       Yes         Alarms       Yes; channel by channel         • Diagnostic alarm       Yes; channel by channel         • Hardware interrupt       Yes; Parameterizable, channels 0 to 7         Diagnostic messages       Yes         • Diagnostic information readable       Yes         • Diagnostic information readable       Yes         • Monitoring the supply voltage       Yes         - parameterizable       Yes         • Monitoring of encoder power supply       Yes; channel by channel         • Wire-break       Yes; channel by channel         • Short-circuit       Yes; channel by channel         • Group error       Yes	Isochronous mode		
DiagnosticsYesAlarmsYes; channel by channel• Diagnostic alarmYes; channel by channel• Hardware interruptYes; Parameterizable, channels 0 to 7Diagnostic messagesYes• Diagnostic information readableYes• Monitoring the supply voltageYes— parameterizableYes• Monitoring of encoder power supplyYes; channel by channel• Wire-breakYes; channel by channel• Short-circuitYes; channel by channel• Group errorYes	Isochronous operation (application synchronized up	No	
DiagnosticsYesAlarmsYes; channel by channel• Diagnostic alarmYes; channel by channel• Hardware interruptYes; Parameterizable, channels 0 to 7Diagnostic messagesYes• Diagnostic information readableYes• Monitoring the supply voltageYes— parameterizableYes• Monitoring of encoder power supplyYes; channel by channel• Wire-breakYes; channel by channel• Short-circuitYes; channel by channel• Group errorYes	Interrupts/diagnostics/status information		
• Diagnostic alarmYes; channel by channel• Hardware interruptYes; Parameterizable, channels 0 to 7Diagnostic messagesYes• Diagnostic information readableYes• Monitoring the supply voltageYes- parameterizableYes• Monitoring of encoder power supplyYes; channel by channel• Wire-breakYes; channel by channel• Short-circuitYes; channel by channel• Group errorYes		Yes	
• Hardware interruptYes; Parameterizable, channels 0 to 7Diagnostic messagesYes• Diagnostic information readableYes• Monitoring the supply voltageYes- parameterizableYes• Monitoring of encoder power supplyYes; channel by channel• Wire-breakYes; channel by channel• Short-circuitYes; channel by channel• Group errorYes	Alarms		
Diagnostic messages• Diagnostic information readableYes• Monitoring the supply voltageYes- parameterizableYes• Monitoring of encoder power supplyYes; channel by channel• Wire-breakYes; channel by channel• Short-circuitYes; channel by channel• Group errorYes	Diagnostic alarm	Yes; channel by channel	
<ul> <li>Diagnostic information readable</li> <li>Yes</li> <li>Monitoring the supply voltage</li> <li>parameterizable</li> <li>Yes</li> <li>Monitoring of encoder power supply</li> <li>Yes; channel by channel</li> <li>Wire-break</li> <li>Short-circuit</li> <li>Short-circuit</li> <li>Yes; channel by channel</li> <li>Yes; channel by channel</li> <li>Yes; channel by channel</li> <li>Yes; channel by channel</li> </ul>	Hardware interrupt	Yes; Parameterizable, channels 0 to 7	
<ul> <li>Monitoring the supply voltage</li> <li>parameterizable</li> <li>Monitoring of encoder power supply</li> <li>Monitoring of encoder power supply</li> <li>Yes; channel by channel</li> <li>Wire-break</li> <li>Short-circuit</li> <li>Group error</li> <li>Yes</li> </ul>	Diagnostic messages		
— parameterizableYes• Monitoring of encoder power supplyYes; channel by channel• Wire-breakYes; channel by channel• Short-circuitYes; channel by channel• Group errorYes	Diagnostic information readable	Yes	
<ul> <li>Monitoring of encoder power supply</li> <li>Wire-break</li> <li>Short-circuit</li> <li>Group error</li> <li>Yes; channel by channel</li> <li>Yes; channel by channel</li> <li>Yes; channel by channel</li> </ul>	<ul> <li>Monitoring the supply voltage</li> </ul>	Yes	
• Wire-break     Yes; channel by channel       • Short-circuit     Yes; channel by channel       • Group error     Yes	— parameterizable	Yes	
<ul> <li>Short-circuit</li> <li>Group error</li> <li>Yes</li> </ul>	<ul> <li>Monitoring of encoder power supply</li> </ul>	Yes; channel by channel	
• Group error Yes	• Wire-break	Yes; channel by channel	
	Short-circuit	Yes; channel by channel	
· · · · · · · · · · · · · · · · · · ·	• Group error	Yes	
	Diagnostics indication LED		

<ul> <li>Monitoring of the supply voltage (PWR-LED)</li> </ul>	Yes; green PWR LED
<ul> <li>Channel status display</li> </ul>	Yes; Green LED
<ul> <li>for channel diagnostics</li> </ul>	Yes; Red LED
• for module diagnostics	Yes; green/red DIAG LED
Potential separation	
Potential separation channels	
<ul> <li>between the channels</li> </ul>	No
<ul> <li>between the channels and backplane bus</li> </ul>	Yes
<ul> <li>between the channels and the power supply of</li> </ul>	Yes
the electronics	
Permissible potential difference	
between different circuits	75 V DC/60 V AC (base isolation)
la slation	
Isolation	
Isolation tested with	707 V DC (type test)
Dimensions	
Dimensions Width	15 mm
Width	15 mm
Width Height Depth	15 mm 73 mm
Width Height Depth Weights	15 mm 73 mm 58 mm
Width Height Depth	15 mm 73 mm