## **SIEMENS**

## **Data sheet**

6ES7136-6BA00-0CA0



SIMATIC DP, Electronics module for ET 200SP, F-DI 8x 24 V DC HF, 15 mm width, up to PL E (ISO 13849-1)/ SIL3 (IEC 61508)

Product type designation usable BaseUnits BU type A0  Product function  • I&M data Engineering with  • STEP 7 TIA Portal configurable/integrated from version • PROFINET from GSD version/GSD revision  • STEP 7 configurable/integrated from version • PROFINET from GSD version/GSD revision  Supply voltage Rated value (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) Reverse polarity protection Prose Current consumption (rated value)  Current consumption (rated value)  Current consumption, max.  21 mA; From the backplane bus  Encoder supply  Number of outputs 8 Short-circuit protection  • pu to 60 °C, max.  24 V encoder supply • 24 V • Short-circuit protection • Output current • up to 60 °C, max.  24 V encoder supply • 24 V • Short-circuit protection • Output current, max.  Power  Power available from the backplane bus  Power loss, typ.  Address space per module • Inputs • Outputs • Outputs • Address space per module • Inputs • Outputs • Outputs • Outputs • Outputs • Address space per module • Inputs • Outputs • Outputs • Address space per module • Inputs • Outputs • Automatic encoding • Yes	General information	
Product function  • I&M data Engineering with  • STEP 7 TIA Portal configurable/integrated from version  • ISTEP 7 TIA Portal configurable/integrated from version  • STEP 7 configurable/integrated from version  • STEP 7 configurable/integrated from version  • PROFINET from GSD version/GSD revision  Supply voltage  Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) 28.8 V Reverse polarity protection  To small current  Current consumption (rated value) Current consumption (rated value) To small Current consumption, max.  21 mA; From the backplane bus  Encoder supply Number of outputs  8 Short-circuit protection Yes; Electronic (response threshold 0.7 A to 1.8 A)  Output current  • up to 60 °C, max. 24 V encoder supply • 24 V • Short-circuit protection • Output current, max.  800 mA; Total current of all encoders  Power  Power available from the backplane bus  70 mW  Power loss  Power loss  Power loss, typ. 4 W  Address space per module • Inputs • Outputs	Product type designation	F-DI 8x24VDC HF
• I&M data Yes; I&M0 to I&M3  Engineering with  • STEP 7 TIA Portal configurable/integrated from version • STEP 7 ton figurable/integrated from version • STEP 7 ton figurable/integrated from version • STEP 7 configurable/integrated from version • PROFINET from GSD version/GSD revision  V2.31  Supply voltage  Rated value (DC) permissible range, lower limit (DC) 20.4 V permissible range, lower limit (DC) 28.8 V Reverse polarity protection Yes  Input current  Current consumption, max. 21 mA; From the backplane bus  Encoder supply  Number of outputs 8 Short-circuit protection Yes; Electronic (response threshold 0.7 A to 1.8 A)  Output current  • up to 60 °C, max. 24 V encoder supply • 24 V Short-circuit protection • Output current, max. 800 mA; Total current of all encoders  Power Power available from the backplane bus  Power loss, typ. 4 W  Address area  Address space per module • Inputs • Outputs	usable BaseUnits	BU type A0
Engineering with  STEP 7 TIA Portal configurable/integrated from version STEP 7 configurable/integrated from version PROFINET from GSD version/GSD revision V2.31  Supply voltage Rated value (DC) Permissible range, lower limit (DC) Permissible range, upper limit (DC) Permissible ran	Product function	
STEP 7 TIA Portal configurable/integrated from version STEP 7 configurable/integrated from version STEP 7 configurable/integrated from version PROFINET from GSD version/GSD revision  Supply voltage Rated value (DC) Permissible range, upper limit (DC) Permissible range, upper limit (DC) Permissible range, upper limit (DC) Reverse polarity protection Pes  Current consumption (rated value) Current consumption (rated value) T5 mA Current consumption, max. 21 mA; From the backplane bus Encoder supply Number of outputs Short-circuit protection Pes; Electronic (response threshold 0.7 A to 1.8 A) Output current  up to 60 °C, max. 0.3 A  24 V encoder supply 24 V Ses; min. L+ (-1.5 V) Short-circuit protection Yes; min. L+ (-1.5 V) Short-circuit protection Yes Output current, max. 800 mA; Total current of all encoders  Power Power available from the backplane bus Power loss Power loss, typ. 4 W  Address area Address space per module Inputs Outputs Outputs 4 byte  Hardware configuration	I&M data	Yes; I&M0 to I&M3
version  • STEP 7 configurable/integrated from version  • PROFINET from GSD version/GSD revision  V2.31  Supply voltage  Rated value (DC)  permissible range, lower limit (DC)  permissible range, upper limit (DC)  permissible range, uper	Engineering with	
PROFINET from GSD version/GSD revision  Supply voltage  Rated value (DC)		V12
Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Permissible range, upper limit (DC) Permissible r		V5.5 SP3 / -
Rated value (DC)  permissible range, lower limit (DC)  permissible range, upper limit (DC)  28.8 V  Reverse polarity protection  Yes  Input current  Current consumption (rated value)  Current consumption, max.  21 mA; From the backplane bus  Encoder supply  Number of outputs  8  Short-circuit protection  • up to 60 °C, max.  24 V encoder supply  • 24 V  • Short-circuit protection  • Output current  • Up to 60 °C, max.  20.3 A  24 V encoder supply  • 24 V  • Short-circuit protection  • Output current, max.  800 mA; Total current of all encoders  Power  Power available from the backplane bus  70 mW  Power loss  Power loss, typ.  4 W  Address area  Address area  Address space per module  • Inputs  • Outputs  • Outputs  4 byte  Hardware configuration	<ul> <li>PROFINET from GSD version/GSD revision</li> </ul>	V2.31
permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection  Reverse polarity protection  Input current  Current consumption (rated value) Current consumption, max.  Encoder supply  Number of outputs  Short-circuit protection  Output current  • up to 60 °C, max.  24 V encoder supply  • 24 V Short-circuit protection  Output current, max.  800 mA; Total current of all encoders  Power  Power available from the backplane bus  70 mW  Power loss  Power loss, typ.  4 W  Address area  Address space per module  • Inputs • Outputs	Supply voltage	
permissible range, upper limit (DC) Reverse polarity protection Yes Input current Current consumption (rated value) Current consumption, max. 21 mA; From the backplane bus Encoder supply Number of outputs 8 Short-circuit protection Yes; Electronic (response threshold 0.7 A to 1.8 A) Output current • up to 60 °C, max.  24 V encoder supply • 24 V • Short-circuit protection Yes; min. L+ (-1.5 V) • Short-circuit protection • Output current, max. 800 mA; Total current of all encoders  Power Power available from the backplane bus 70 mW  Power loss Power loss, typ. 4 W  Address area  Address space per module • Inputs • Outputs	Rated value (DC)	24 V
Reverse polarity protection  Input current  Current consumption (rated value)  Current consumption, max.  21 mA; From the backplane bus  Encoder supply  Number of outputs  Short-circuit protection  output current  outp to 60 °C, max.  24 V encoder supply  24 V  Short-circuit protection  ves; Electronic (response threshold 0.7 A to 1.8 A)  24 V encoder supply  24 V  Short-circuit protection  output current  output current, max.  800 mA; Total current of all encoders  Power  Power loss  Power loss  Power loss, typ.  4 W  Address space per module  oliputs  outputs  6 byte  Outputs  Hardware configuration	permissible range, lower limit (DC)	20.4 V
Input current Current consumption (rated value) Current consumption, max.  21 mA; From the backplane bus  Encoder supply  Number of outputs Short-circuit protection Output current  • up to 60 °C, max.  24 V encoder supply  • 24 V Short-circuit protection Yes; min. L+ (-1.5 V) Short-circuit protection Yes Output current, max. 800 mA; Total current of all encoders  Power  Power loss Power loss Power loss Power space per module • Inputs • Outputs • Outputs • 6 byte • Outputs  Hardware configuration	permissible range, upper limit (DC)	28.8 V
Current consumption (rated value)  Current consumption, max.  21 mA; From the backplane bus  Encoder supply  Number of outputs  8 Short-circuit protection  Output current  • up to 60 °C, max.  24 V encoder supply  • 24 V  • Short-circuit protection  Output current, max.  800 mA; Total current of all encoders  Power available from the backplane bus  Power loss, typ.  Address area  Address space per module  • Inputs  • Outputs  • Outputs  • Outputs  • Outputs  • Outputs  • Abyte  Address configuration	Reverse polarity protection	Yes
Current consumption, max.  Encoder supply  Number of outputs  Short-circuit protection  Output current  • up to 60 °C, max.  24 V encoder supply  • 24 V  • Short-circuit protection  Output current, max.  Output current, max.  800 mA; Total current of all encoders  Power available from the backplane bus  Power loss, typ.  Address area  Address space per module  • Inputs  • Outputs  • Outputs  • Outputs  • Outputs  • Outputs  • Abyte  Address configuration	Input current	
Number of outputs Short-circuit protection  Output current  oup to 60 °C, max.  24 V encoder supply  24 V Short-circuit protection Output current, max.  Output current, max.  800 mA; Total current of all encoders  Power  Power available from the backplane bus  Power loss, typ.  Address area  Address space per module Inputs Outputs O	Current consumption (rated value)	75 mA
Number of outputs  Short-circuit protection  Yes; Electronic (response threshold 0.7 A to 1.8 A)  Output current  up to 60 °C, max.  24 V encoder supply  24 V Short-circuit protection Output current, max.  800 mA; Total current of all encoders  Power  Power available from the backplane bus  Power loss  Power loss, typ.  Address area  Address space per module Inputs Outputs  6 byte Outputs  Hardware configuration	Current consumption, max.	21 mA; From the backplane bus
Short-circuit protection  Output current  • up to 60 °C, max.  24 V encoder supply  • 24 V  • Short-circuit protection  • Output current, max.  Power  Power available from the backplane bus  Power loss  Power loss, typ.  Address area  Address space per module  • Inputs  • Outputs  Hardware configuration	Encoder supply	
Output current  • up to 60 °C, max.  24 V encoder supply  • 24 V  • Short-circuit protection • Output current, max.  Power  Power available from the backplane bus  Power loss  Power loss  Power loss, typ.  Address area  Address space per module • Inputs • Outputs  Hardware configuration	Number of outputs	8
<ul> <li>up to 60 °C, max.</li> <li>24 V encoder supply</li> <li>24 V</li> <li>Short-circuit protection</li> <li>Output current, max.</li> <li>Power</li> <li>Power available from the backplane bus</li> <li>Power loss</li> <li>Power loss, typ.</li> <li>Address area</li> <li>Address space per module</li> <li>Inputs</li> <li>Outputs</li> <li>4 byte</li> <li>Hardware configuration</li> </ul>	Short-circuit protection	Yes; Electronic (response threshold 0.7 A to 1.8 A)
24 V encoder supply  • 24 V  • Short-circuit protection  • Output current, max.  Power  Power available from the backplane bus  Power loss  Power loss, typ.  Address area  Address space per module  • Inputs  • Outputs  Hardware configuration	Output current	
<ul> <li>24 V</li> <li>Short-circuit protection</li> <li>Output current, max.</li> <li>Power</li> <li>Power available from the backplane bus</li> <li>Power loss</li> <li>Power loss, typ.</li> <li>Address area</li> <li>Address space per module <ul> <li>Inputs</li> <li>Outputs</li> <li>Outputs</li> <li>Hardware configuration</li> </ul> </li> <li>Yes; min. L+ (-1.5 V)</li> <li>Yes</li> <li>Yes</li> <li>A0 mA; Total current of all encoders</li> <li>70 mW</li> </ul> <li>Add W</li> <li>Address space per module</li> <li>Inputs</li> <li>Outputs</li> <li>4 byte</li> <li>Hardware configuration</li>	● up to 60 °C, max.	0.3 A
<ul> <li>Short-circuit protection</li> <li>Output current, max.</li> <li>800 mA; Total current of all encoders</li> </ul> Power Power available from the backplane bus Power loss Power loss, typ. 4 W Address area Address space per module <ul> <li>Inputs</li> <li>Outputs</li> <li>Outputs</li> <li>byte</li> </ul> Hardware configuration Yes 800 mA; Total current of all encoders 70 mW W 6 byte 4 byte Hardware configuration	24 V encoder supply	
● Output current, max.  Power  Power available from the backplane bus  Power loss  Power loss, typ.  Address area  Address space per module  ● Inputs  ● Outputs  Outputs  Hardware configuration	• 24 V	Yes; min. L+ (-1.5 V)
Power available from the backplane bus  Power loss  Power loss, typ.  4 W  Address area  Address space per module  Inputs Outputs  Outputs  Hardware configuration	<ul> <li>Short-circuit protection</li> </ul>	Yes
Power available from the backplane bus  Power loss  Power loss, typ.  Address area  Address space per module  Inputs Outputs  Outputs  Address configuration	<ul> <li>Output current, max.</li> </ul>	800 mA; Total current of all encoders
Power loss Power loss, typ. 4 W  Address area  Address space per module  Inputs Outputs Outputs  Hardware configuration	Power	
Power loss, typ. 4 W  Address area  Address space per module  Inputs  Outputs  Outputs  Hardware configuration	Power available from the backplane bus	70 mW
Address area  Address space per module  Inputs Outputs  Outputs  4 byte  Hardware configuration	Power loss	
Address space per module  Inputs Outputs  Outputs  Hardware configuration	Power loss, typ.	4 W
<ul> <li>Inputs</li> <li>Outputs</li> <li>4 byte</li> </ul> Hardware configuration	Address area	
Outputs     4 byte  Hardware configuration	Address space per module	
Hardware configuration	• Inputs	6 byte
	<ul> <li>Outputs</li> </ul>	4 byte
Automatic encoding Yes	Hardware configuration	
	Automatic encoding	Yes

Electronic coding element type F	Yes
Digital inputs	
Number of digital inputs	8
Source/sink input	Yes
Input characteristic curve in accordance with IEC 61131, type 1	Yes
Input voltage	
Rated value (DC)	24 V
• for signal "0"	-30 to +5 V
• for signal "1"	+15 to +30 V
Input current	
	3.7 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	Yes
— at "0" to "1", min.	0.4 ms
— at "0" to "1", max.	20 ms
— at "1" to "0", min.	0.4 ms
— at "1" to "0", max.	20 ms
for technological functions	
— parameterizable	No
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	500 m
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Alarms	
Diagnostic alarm	Yes
Hardware interrupt	No
Diagnostics indication LED	
• RUN LED	Yes; green LED
• ERROR LED	Yes; red LED
<ul> <li>Monitoring of the supply voltage (PWR-LED)</li> </ul>	Yes; green PWR LED
Channel status display	Yes; green LED
for channel diagnostics	Yes; red LED
for module diagnostics	Yes; green/red DIAG LED
Potential separation	
Potential separation channels	
between the channels	No
<ul> <li>between the channels and backplane bus</li> </ul>	Yes
<ul> <li>between the channels and the power supply of the</li> </ul>	No
electronics	
Isolation	
Isolation tested with	707 V DC (type test)
Standards, approvals, certificates	
Suitable for safety functions	Yes
Highest safety class achievable in safety mode	
Performance level according to ISO 13849-1	PLe
• SIL acc. to IEC 61508	SIL 3
Probability of failure (for service life of 20 years and repa	ir time of 100 hours)
<ul> <li>Low demand mode: PFDavg in accordance with SIL3</li> </ul>	< 2.00E-05
<ul> <li>High demand/continuous mode: PFH in accordance with SIL3</li> </ul>	< 1.00E-09 1/h
Ambient conditions	
Ambient temperature during operation	
horizontal installation, min.	0 °C
<ul> <li>horizontal installation, max.</li> </ul>	60 °C

<ul> <li>vertical installation, min.</li> </ul>	0°C
<ul> <li>vertical installation, max.</li> </ul>	50 °C
Altitude during operation relating to sea level	
<ul> <li>Installation altitude above sea level, max.</li> </ul>	4 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Dimensions	
Width	15 mm
Height	73 mm
Depth	58 mm
Weights	
Weight, approx.	49 g

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