SIPLUS ET 200SP, digital output module, DQ 8x 24VDC/0.5A ST, -40...+70°C with conformal coating based on 6ES7132-6BF01-0BA0 . suitable for BU type A0, Color code CC02, Module diagnostics



General information		
Product type designation	DQ 8x24VDC/0.5A ST	
Firmware version		
<ul> <li>FW update possible</li> </ul>	No	
usable BaseUnits	BU type A0	
Color code for module-specific color identification plate	CC02	
Product function		
● I&M data	Yes; I&M0 to I&M3	
• Isochronous mode	No	
Operating mode		
• DQ	Yes	
<ul> <li>DQ with energy-saving function</li> </ul>	No	
• PWM	No	
<ul> <li>Oversampling</li> </ul>	No	
• MSO	No	
Redundancy		
Redundancy capability	Yes	

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  Power loss Rated value (DC) 24 V  Power loss Power loss, typ. 1 W  Address area  Address area  Address space per module 1 byte for Ol information 1 byte  Inputs		
permissible range, lower limit (DC) 19.2 V permissible range, upper limit (DC) 28.8 V Reverse polarity protection Yes  Reverse polarity protection Yes  Power loss Power loss, typ. 1W  Address area  Address space per module  Inputs + 1 byte for QI information 1 byte  Iardware configuration  Automatic encoding Yes  Submodules  Number of configurable submodules, max. 4  Selection of BaseUnit for connection BU type A0  2 - 2-wire connection BU type A0  3 - 3-wire connection BU type A0  4 - 4-wire connection BU type A0  5 - 4-wire connection BU type A0  4 - 4-wire connection BU type A0  5 - 4-wire connection BU type A0  6 - 4-wire connection BU type A0  7 - 4-wire connection BU type A0  8 - 4-wire connection BU type A0  9 - 4-wire connection BU type A0  1 - 4-wire connection BU type A0  9 - 4-wire connection BU type A0  1 - 4-wire connection BU type A0  9 - 4-wire connection BU type A0  1 - 4-wire connection BU type A0  9 - 4-wire connection BU type A0  1 - 4-wire connection BU type A0  9 - 4-wire connection BU type A0 Potential isolation module  Digital outputs  Type of digital output  Number of digital output  Number of digital outputs  8 - Current-sourcing  Yes  Digital outputs, parameterizable Yes  Short-circuit protection Yes  Digital outputs, parameterizable Yes  Short-circuit protection Yes  Limitation of inductive shutdown voltage to Typ. L+ (-50 V)  Controlling a digital input  Yes  Switching capacity of the outputs	Supply voltage	
permissible range, upper limit (DC)  Reverse polarity protection  Pyes  **Power Lourent Current Current Consumption, max.**  **Dutput voltage  Rated value (DC)  **Power loss**  **Power loss, typ.**  **Address area  **Address space per module**  **Inputs**  **Inputs**  **Outputs**  **Inputs**		
Reverse polarity protection  Post current Current consumption, max.  35 mA; without load  Duptut voltage Rated value (DC)  Power loss Power loss, typ.  1 W  Address area Address space per module  Inputs Inputs Inputs Ves  Automatic encoding Mechanical coding element Ves  Submodules  Number of configurable submodules, max.  Selection of BaseUnit for connection variants  1 - wire connection Su- vivie connection BU type A0 Su- vivie connection Su- vivie connection BU type A0 Su- vivie connection Submodules  Inputs Submodules  Submodules  Number of defidial output Survice connection Submodules  Submodul		
Current consumption, max.  35 mA; without load  Cutput voltage  Rated value (DC)  24 V  Coursel loss  Power loss Power loss, typ.  1 W  Address area  Address space per module  Inputs  Inputs  Inputs  Ves  Mechanical coding element  Submodules  Inversion of BaseUnit for connection variants  Inversion of Gigital outputs  Survice connection  Inversion of Gigital outputs  Source output (PNP, current-sourcing)  Number of digital outputs  Response threshold, typ.  Limitation of inductive shutdown voltage to  Typ. L* (-50 V)  Controlling a digital input  Yes  Switching capacity of the outputs		28.8 V
Current consumption, max.  35 mA; without load  Dutput voltage Rated value (DC)  24 V  Power loss Power loss, typ.  Address area  Address space per module  • Inputs • Outputs • Outputs  • Numbur of configurable submodules, max.  Selection of BaseUnit for connection variants  • 1-wire connection • 2-wire connection • 2-wire connection • 3-wire connection • 3-wire connection • 4-wire connection • 1-yoe of digital outputs  Source output (PNP, current-sourcing) Number of digital outputs  Source output (PNP, current-sourcing) Number of digital outputs  Source output (PNP, current-sourcing) Number of digital outputs  Current-sourcing Yes  Short-circuit protection • Response threshold, typ. Limitation of inductive shutdown voltage to Controlling a digital input Yes Switching capacity of the outputs	Reverse polarity protection	Yes
Coutput voltage Rated value (DC)  Power loss Power loss, typ.  Address space  • Inputs • Outputs • Outputs  - Outputs  • Mechanical coding element  • Number of configurable submodules, max.  • 1-vire connection • 2-wire connection • 3-wire connection • 4-wire connection  • 4-wire connection  • 1-wire c	Input current	
Rated value (DC)  24 V  Power loss Power loss, typ. 1 W  Address area  Address space per module  Inputs	Current consumption, max.	35 mA; without load
Rated value (DC)  24 V  Power loss Power loss, typ. 1 W  Address area  Address space per module  Inputs	Output voltage	
Power loss, typ. 1 W  Address area  Address space per module  • Inputs • Outputs  • Outputs  - Inputs • Outputs  - Inputs • Outputs  - Inputs • Mechanical coding element  • Number of configurable submodules, max.  • 1-wire connection • 2-wire connection • 2-wire connection • 3-wire connection • 3-wire connection • 4-wire connection • 1-wire connection • 1-wire connection • 1-wire connection • 1-wire connection • 2-wire connection • 1-wire connection • 1-wire connection • 2-wire connection • 1-wire connection • 2-wire connection • 3-wire connection • 3-wire connection • 1-wire connection • 2-wire connection • 3-wire connection • 3-wire connection • 1-wire connection • 1-wire connection • 2-wire connection • 3-wire connection • 3-wire connection • 3-wire connection • 3-wire connection • 4-wire connection • 4-wire connection • 5-wire connection • 6-wire connection • 7-wire connection • 8-wire connection • 9-wire connection • 9-wire connection • 1-wire con	Rated value (DC)	24 V
Power loss, typ. 1 W  Address area  Address space per module  • Inputs • Outputs  • Outputs  - Inputs • Outputs  - Inputs • Outputs  - Inputs • Mechanical coding element  • Number of configurable submodules, max.  • 1-wire connection • 2-wire connection • 2-wire connection • 3-wire connection • 3-wire connection • 4-wire connection • 1-wire connection • 1-wire connection • 1-wire connection • 1-wire connection • 2-wire connection • 1-wire connection • 1-wire connection • 2-wire connection • 1-wire connection • 2-wire connection • 3-wire connection • 3-wire connection • 1-wire connection • 2-wire connection • 3-wire connection • 3-wire connection • 1-wire connection • 1-wire connection • 2-wire connection • 3-wire connection • 3-wire connection • 3-wire connection • 3-wire connection • 4-wire connection • 4-wire connection • 5-wire connection • 6-wire connection • 7-wire connection • 8-wire connection • 9-wire connection • 9-wire connection • 1-wire con	Power loss	
Address space per module  Inputs Outputs  Outputs  Automatic encoding Mechanical coding element  Submodules  Number of configurable submodules, max.  Selection of BaseUnit for connection variants  Inwire connection But ype A0 Submection But ype A0 But ype A0 But ype A0 But ype A0 + Potential isolation module  Digital outputs  Type of digital outputs  Source output (PNP, current-sourcing)  Number of digital outputs  But ype A0 But ype A0 But ype A0 + Potential isolation module  Digital outputs  Type of digital outputs  Response threshold, typ.  I hat Limitation of inductive shutdown voltage to  Type. L+ (-50 V)  Controlling a digital input Yes  Switching capacity of the outputs		1 W
Address space per module  Inputs Outputs  Outputs  Automatic encoding Mechanical coding element  Submodules  Number of configurable submodules, max.  Selection of BaseUnit for connection variants  Inwire connection But ype A0 But ype A0 But ype A0 But ype A0 + Potential isolation module  Submodules  Auwire connection But ype A0 + Potential isolation module  Digital outputs  Type of digital outputs  Source output (PNP, current-sourcing)  Number of digital outputs  Source output (PNP, current-sourcing)  Pyes  Short-circuit protection Response threshold, typ.  Limitation of inductive shutdown voltage to  Type. L+ (-50 V)  Controlling a digital input  Yes  Switching capacity of the outputs	Address area	
Inputs Outputs  It byte  Outputs  It byte  It b		
Plandware configuration  Automatic encoding		+ 1 byte for QI information
Automatic encoding  • Mechanical coding element  Yes  Submodules  • Number of configurable submodules, max.  • 1-wire connection  • 2-wire connection  • 3-wire connection  • 4-wire connection  Bu type A0  Bu type A0  Bu type A0  Bu type A0  Survine connection  Bu type A0 with AUX terminals  • 4-wire connection  Bu type A0 + Potential isolation module  Digital outputs  Type of digital output  Source output (PNP, current-sourcing)  Number of digital outputs  Current-sourcing  Yes  Short-circuit protection  • Response threshold, typ.  Limitation of inductive shutdown voltage to  Controlling a digital input  Yes  Switching capacity of the outputs	·	
Automatic encoding  Mechanical coding element  Mechanical coding element  Number of configurable submodules, max.  Number of configurable submodules, max.  Selection of BaseUnit for connection variants  1-wire connection  1-wire connection  1-wire connection  1-wire connection  1-wire connection  1-wire connection  2-wire connection  1-wire connection  2-wire connection  3-wire connection  1-wire connection  2-wire connection  3-wire connection  3-wire connection  4-wire connection  3-wire connection  4-wire connection  3-wire connection  4-wire connection  4-wire connection  5-wire connection  4-wire connection  4-wire connection  5-wire connection  4-wire connection  5-wire connection  4-wire connection  5-wire connection  6-wire connection	- Outputs	, 5,10
Mechanical coding element  Ves  Submodules  Number of configurable submodules, max.  Number of configurable submodules, max.  Selection of BaseUnit for connection variants  1-wire connection  2-wire connection  Bu type A0  3-wire connection  Bu type A0 with AUX terminals  4-wire connection  Bu type A0 + Potential isolation module  Digital outputs  Type of digital output  Source output (PNP, current-sourcing)  Number of digital outputs  Current-sourcing  Yes  Digital outputs, parameterizable  Short-circuit protection  Response threshold, typ.  Limitation of inductive shutdown voltage to  Typ. L+ (-50 V)  Controlling a digital input  Switching capacity of the outputs	Hardware configuration	
Submodules  Number of configurable submodules, max.  Selection of BaseUnit for connection variants  1-wire connection 2-wire connection BU type A0 3-wire connection BU type A0 with AUX terminals 4-wire connection BU type A0 + Potential isolation module  Digital outputs  Type of digital output Source output (PNP, current-sourcing)  Number of digital outputs  Current-sourcing Yes  Digital outputs, parameterizable Short-circuit protection Response threshold, typ.  Limitation of inductive shutdown voltage to Typ. L+ (-50 V)  Controlling a digital input Switching capacity of the outputs	Automatic encoding	Yes
Number of configurable submodules, max.  Selection of BaseUnit for connection variants  1-wire connection 2-wire connection 3-wire connection 4-wire connection Bu type A0 Bu type A0 with AUX terminals Bu type A0 + Potential isolation module  Digital outputs  Type of digital output Source output (PNP, current-sourcing)  Number of digital outputs  Current-sourcing Yes  Digital outputs, parameterizable Yes  Short-circuit protection Response threshold, typ.  Limitation of inductive shutdown voltage to  Typ. L+ (-50 V)  Controlling a digital input  Switching capacity of the outputs	<ul> <li>Mechanical coding element</li> </ul>	Yes
Selection of BaseUnit for connection variants  • 1-wire connection • 2-wire connection BU type A0  • 3-wire connection BU type A0 with AUX terminals • 4-wire connection BU type A0 + Potential isolation module  Digital outputs  Type of digital output Source output (PNP, current-sourcing)  Number of digital outputs  Current-sourcing Yes  Digital outputs, parameterizable Short-circuit protection • Response threshold, typ. 1 A  Limitation of inductive shutdown voltage to Typ. L+ (-50 V)  Controlling a digital input  Yes  Switching capacity of the outputs	Submodules	
<ul> <li>1-wire connection</li> <li>2-wire connection</li> <li>3-wire connection</li> <li>4-wire connection</li> <li>BU type A0 with AUX terminals</li> <li>4-wire connection</li> <li>BU type A0 + Potential isolation module</li> </ul> Digital outputs Type of digital output <ul> <li>Source output (PNP, current-sourcing)</li> <li>Number of digital outputs</li> <li>8</li> <li>Current-sourcing</li> <li>Yes</li> <li>Digital outputs, parameterizable</li> <li>Yes</li> </ul> Short-circuit protection <ul> <li>Response threshold, typ.</li> <li>1 A</li> </ul> Limitation of inductive shutdown voltage to <ul> <li>Typ. L+ (-50 V)</li> </ul> Controlling a digital input <ul> <li>Yes</li> </ul> Switching capacity of the outputs	<ul><li>Number of configurable submodules, max.</li></ul>	4
<ul> <li>● 2-wire connection</li> <li>● 3-wire connection</li> <li>BU type A0 with AUX terminals</li> <li>BU type A0 + Potential isolation module</li> </ul> Digital outputs Type of digital output Source output (PNP, current-sourcing) Number of digital outputs 8 Current-sourcing Digital outputs, parameterizable Short-circuit protection <ul> <li>● Response threshold, typ.</li> <li>I A</li> </ul> Limitation of inductive shutdown voltage to <ul> <li>Typ. L+ (-50 V)</li> </ul> Controlling a digital input Yes Switching capacity of the outputs	Selection of BaseUnit for connection variants	
● 3-wire connection BU type A0 with AUX terminals BU type A0 + Potential isolation module  Digital outputs  Type of digital output Source output (PNP, current-sourcing) Number of digital outputs 8 Current-sourcing Yes  Digital outputs, parameterizable Yes  Short-circuit protection PResponse threshold, typ. 1 A  Limitation of inductive shutdown voltage to Typ. L+ (-50 V)  Controlling a digital input  Suitching capacity of the outputs	• 1-wire connection	BU type A0
● 4-wire connection  BU type A0 + Potential isolation module  Digital outputs  Type of digital output  Number of digital outputs  8  Current-sourcing  Yes  Digital outputs, parameterizable  Short-circuit protection  ● Response threshold, typ.  Limitation of inductive shutdown voltage to  Typ. L+ (-50 V)  Controlling a digital input  Source output (PNP, current-sourcing)  8  Typ. L+ (-50 V)  Yes  Switching capacity of the outputs	• 2-wire connection	BU type A0
Digital outputs  Type of digital output  Number of digital outputs  8  Current-sourcing  Yes  Digital outputs, parameterizable  Short-circuit protection  • Response threshold, typ.  Limitation of inductive shutdown voltage to  Typ. L+ (-50 V)  Controlling a digital input  Source output (PNP, current-sourcing)  8  Tyes  1  Tyes  1  Tyes  Yes  Switching capacity of the outputs	3-wire connection	BU type A0 with AUX terminals
Type of digital output  Number of digital outputs  8  Current-sourcing  Digital outputs, parameterizable  Short-circuit protection  • Response threshold, typ.  Limitation of inductive shutdown voltage to  Typ. L+ (-50 V)  Controlling a digital input  Source output (PNP, current-sourcing)  8  Tyes  Yes  Tyes  1 A  Typ. L+ (-50 V)  Yes  Switching capacity of the outputs	• 4-wire connection	BU type A0 + Potential isolation module
Number of digital outputs 8  Current-sourcing Yes  Digital outputs, parameterizable Yes  Short-circuit protection Yes  • Response threshold, typ. 1 A  Limitation of inductive shutdown voltage to Typ. L+ (-50 V)  Controlling a digital input Yes  Switching capacity of the outputs	Digital outputs	
Current-sourcing  Digital outputs, parameterizable  Yes  Short-circuit protection  Response threshold, typ.  1 A  Limitation of inductive shutdown voltage to  Typ. L+ (-50 V)  Controlling a digital input  Yes  Switching capacity of the outputs	Type of digital output	Source output (PNP, current-sourcing)
Digital outputs, parameterizable  Short-circuit protection  Response threshold, typ.  Limitation of inductive shutdown voltage to  Typ. L+ (-50 V)  Controlling a digital input  Switching capacity of the outputs	Number of digital outputs	8
Short-circuit protection  ● Response threshold, typ.  Limitation of inductive shutdown voltage to  Controlling a digital input  Switching capacity of the outputs  Yes  Typ. L+ (-50 V)  Yes	Current-sourcing	Yes
● Response threshold, typ. 1 A Limitation of inductive shutdown voltage to Typ. L+ (-50 V) Controlling a digital input Yes Switching capacity of the outputs	Digital outputs, parameterizable	Yes
Limitation of inductive shutdown voltage to  Typ. L+ (-50 V)  Controlling a digital input  Switching capacity of the outputs	Short-circuit protection	Yes
Controlling a digital input Yes Switching capacity of the outputs	<ul> <li>Response threshold, typ.</li> </ul>	1 A
Switching capacity of the outputs	Limitation of inductive shutdown voltage to	Typ. L+ (-50 V)
	Controlling a digital input	Yes
• with resistive load, max. 0.5 A	Switching capacity of the outputs	
	with resistive load, max.	0.5 A
• on lamp load, max. 5 W	• on lamp load, max.	5 W
Load resistance range	Load resistance range	
• lower limit 48 Ω		48 Ω
● upper limit 12 kΩ	• upper limit	12 kΩ

Output voltage		
• for signal "1", min.	L+ (-0.8 V)	
Output current		
● for signal "1" rated value	0.5 A	
• for signal "1" permissible range, max.	0.5 A	
• for signal "0" residual current, max.	0.1 mA	
Output delay with resistive load		
• "0" to "1", max.	50 μs; at rated load	
• "1" to "0", max.	100 μs; at rated load	
Parallel switching of two outputs		
• for uprating	No	
<ul> <li>for redundant control of a load</li> </ul>	Yes	
Switching frequency		
• with resistive load, max.	100 Hz	
• with inductive load, max.	2 Hz	
• on lamp load, max.	10 Hz	
Total current of the outputs		
Current per channel, max.	0.5 A	
<ul> <li>Current per module, max.</li> </ul>	4 A	
Total current of the outputs (per module)		
horizontal installation		
— up to 30 °C, max.	4 A	
— up to 40 °C, max.	4 A	
— up to 50 °C, max.	4 A	
— up to 60 °C, max.	4 A	
vertical installation		
— up to 30 °C, max.	4 A; in all other mounting positions	
— up to 40 °C, max.	4 A; in all other mounting positions	
— up to 50 °C, max.	4 A; in all other mounting positions	
Cable length		
• shielded, max.	1 000 m	
• unshielded, max.	600 m	
Interrupts/diagnostics/status information		
Diagnostics function	Yes	
Substitute values connectable	Yes	
Alarms		
Diagnostic alarm	Yes	
Diagnostic messages		
<ul><li>Monitoring the supply voltage</li></ul>	Yes	
Wire-break	Yes; Module-wise	
Short-circuit to M	Yes; Module-wise	

	V M II .
• Short-circuit to L+	Yes; Module-wise
Diagnostics indication LED	
<ul> <li>Monitoring of the supply voltage (PWR-LED)</li> </ul>	Yes; green PWR LED
Channel status display	Yes; green LED
<ul> <li>for channel diagnostics</li> </ul>	No
• 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 the electronics</li> </ul>	No
Isolation	
Isolation tested with	707 V DC (type test)
Standards, approvals, certificates	
Suitable for safety functions	No
Suitable for safety-related tripping of standard modules	Yes
Ambient conditions	
Ambient temperature during operation	
<ul><li>horizontal installation, min.</li></ul>	-40 °C; = Tmin (incl. condensation/frost)
<ul> <li>horizontal installation, max.</li> </ul>	70 °C; = Tmax; > +60 °C max. total current 1.0 A
Altitude during operation relating to sea level	
<ul> <li>Installation altitude above sea level, max.</li> </ul>	5 000 m
<ul> <li>Ambient air temperature-barometric pressure- altitude</li> </ul>	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)
Relative humidity	
<ul> <li>With condensation, tested in accordance with IEC 60068-2-38, max.</li> </ul>	100 %; incl. condensation / frost permitted (no commissioning under condensation conditions)
Resistance	
Coolants and lubricants	
<ul> <li>Resistant to commercially available coolants and lubricants</li> </ul>	Yes; Incl. diesel and oil droplets in the air
Use in stationary industrial systems	
<ul> <li>to biologically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
<ul> <li>to chemically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); $^{\star}$
<ul> <li>to mechanically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3S4 incl. sand, dust, *

Against mechanical environmental	Yes; Class 3M8 using the SIPLUS Mounting Kit ET 200SP
conditions acc. to EN 60721-3-3	(6AG1193-6AA00-0AA0)
Use on ships/at sea	
<ul> <li>to biologically active substances according to EN 60721-3-6</li> </ul>	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request
<ul> <li>to chemically active substances according to EN 60721-3-6</li> </ul>	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); $^{\star}$
<ul> <li>to mechanically active substances according to EN 60721-3-6</li> </ul>	Yes; Class 6S3 incl. sand, dust; *
<ul> <li>Against mechanical environmental conditions acc. to EN 60721-3-6</li> </ul>	Yes; Class 6M4 using the SIPLUS Mounting Kit ET 200SP (6AG1193-6AA00-0AA0)
Usage in industrial process technology	
<ul> <li>Against chemically active substances acc.</li> <li>to EN 60654-4</li> </ul>	Yes; Class 3 (excluding trichlorethylene)
<ul> <li>Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04</li> </ul>	Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)
Remark	
<ul> <li>Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04</li> </ul>	* The supplied plug covers must remain in place over the unused interfaces during operation!
Conformal coating	
<ul> <li>Coatings for printed circuit board assemblies acc. to EN 61086</li> </ul>	Yes; Class 2 for high reliability
<ul> <li>Protection against fouling acc. to EN 60664-3</li> </ul>	Yes; Type 1 protection
<ul> <li>Military testing according to MIL-I-46058C, Amendment 7</li> </ul>	Yes; Discoloration of coating possible during service life
<ul> <li>Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A</li> </ul>	Yes; Conformal coating, Class A
Dimensions	
Width	15 mm
Height	73 mm
Depth	58 mm
Weights	
Weight, approx.	30 g

last modified:

03/14/2020