

SIPLUS ET 200SP, digital output module, DQ 16x 24VDC/0.5A ST - 40...+70 °C with conformal coating based on 6ES7132-6BH01-0BA0 . suitable for BU type A0, Color code CC00, Module diagnostics



General information	
Product type designation	DQ 16x24VDC/0.5A ST
Firmware version	
<ul style="list-style-type: none"> <li>FW update possible</li> </ul>	No
usable BaseUnits	BU type A0
Color code for module-specific color identification plate	CC00
Product function	
<ul style="list-style-type: none"> <li>I&amp;M data</li> </ul>	Yes; I&M0 to I&M3
Operating mode	
<ul style="list-style-type: none"> <li>DQ</li> <li>DQ with energy-saving function</li> <li>PWM</li> <li>Oversampling</li> <li>MSO</li> </ul>	Yes No No No No
Redundancy	
<ul style="list-style-type: none"> <li>Redundancy capability</li> </ul>	Yes
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

#### Input current

Current consumption, max.	60 mA; without load
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#### Output voltage

Rated value (DC)	24 V
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#### Power loss

Power loss, typ.	1 W
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#### Address area

Address space per module	
• Inputs	+ 2 bytes for QI information
• Outputs	2 byte

#### Hardware configuration

Automatic encoding	Yes
• Mechanical coding element	Yes
Selection of BaseUnit for connection variants	
• 1-wire connection	BU type A0
• 2-wire connection	BU type A0 + Potential isolation module
• 3-wire connection	BU type A0 + Potential isolation module
• 4-wire connection	BU type A0 + Potential isolation module

#### Digital outputs

Type of digital output	Source output (PNP, current-sourcing)
Number of digital outputs	16
Current-sinking	No
Current-sourcing	Yes
Short-circuit protection	Yes
• Response threshold, typ.	1 A
Open-circuit detection	Yes
Limitation of inductive shutdown voltage to	Typ. L+ (-50 V)
Controlling a digital input	Yes
Switching capacity of the outputs	
• with resistive load, max.	0.5 A
• on lamp load, max.	5 W
Load resistance range	
• lower limit	48 Ω
• upper limit	12 kΩ
Output current	
• for signal "1" rated value	0.5 A

• for signal "0" residual current, max.	0.1 mA
<b>Output delay with resistive load</b>	
• "0" to "1", typ.	50 µs
• "1" to "0", typ.	100 µs
<b>Parallel switching of two outputs</b>	
• for uprating	No
• for redundant control of a load	Yes
<b>Switching frequency</b>	
• with resistive load, max.	100 Hz
• with inductive load, max.	2 Hz
• on lamp load, max.	10 Hz
<b>Total current of the outputs</b>	
• Current per channel, max.	0.5 A
• Current per module, max.	8 A
<b>Total current of the outputs (per module)</b>	
horizontal installation	
— up to 30 °C, max.	8 A
— up to 40 °C, max.	8 A
— up to 50 °C, max.	6 A
— up to 60 °C, max.	4 A
vertical installation	
— up to 30 °C, max.	8 A; in all other mounting positions
— up to 40 °C, max.	6 A; in all other mounting positions
— up to 50 °C, max.	4 A; in all other mounting positions
<b>Cable length</b>	
• shielded, max.	1 000 m
• unshielded, max.	600 m
<b>Isochronous mode</b>	
Isochronous operation (application synchronized up to terminal)	No
<b>Interrupts/diagnostics/status information</b>	
Diagnostics function	Yes
Substitute values connectable	Yes
<b>Alarms</b>	
• Diagnostic alarm	Yes
<b>Diagnostic messages</b>	
• Monitoring the supply voltage	Yes
• Wire-break	Yes; Module-wise
• Short-circuit to M	Yes; Module-wise
• Short-circuit to L+	Yes; Module-wise
<b>Diagnostics indication LED</b>	

- Monitoring of the supply voltage (PWR-LED) Yes; green PWR LED
- Channel status display Yes; Green LED
- for channel diagnostics No
- for module diagnostics Yes; green/red DIAG LED

### Potential separation

#### Potential separation channels

- between the channels No
- between the channels and backplane bus Yes

### Isolation

Isolation tested with 707 V DC (type test)

### Standards, approvals, certificates

Suitable for safety-related tripping of standard modules Yes

### Ambient conditions

#### Ambient temperature during operation

- horizontal installation, min. -40 °C; = Tmin
- horizontal installation, max. 70 °C; = Tmax; see Derating BasedOn (e.g. manual), additionally Tmax > 60 °C max. total current 1 A

#### Altitude during operation relating to sea level

- Installation altitude above sea level, max. 5 000 m
- Ambient air temperature-barometric pressure-altitude 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

- With condensation, tested in accordance with IEC 60068-2-38, max. 100 %; incl. condensation / frost permitted (no commissioning under condensation conditions)

### Resistance

#### Coolants and lubricants

- Resistant to commercially available coolants and lubricants Yes; Incl. diesel and oil droplets in the air

#### Use in stationary industrial systems

- to biologically active substances according to EN 60721-3-3 Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
- to chemically active substances according to EN 60721-3-3 Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); \*
- to mechanically active substances according to EN 60721-3-3 Yes; Class 3S4 incl. sand, dust, \*

#### Use on ships/at sea

- to biologically active substances according to EN 60721-3-6 Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request

— to chemically active substances according to EN 60721-3-6

— to mechanically active substances according to EN 60721-3-6

Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); \*

Yes; Class 6S3 incl. sand, dust; \*

#### Remark

— Note regarding classification of environmental conditions acc. to EN 60721

\* The supplied plug covers must remain in place over the unused interfaces during operation!

#### Conformal coating

- Coatings for printed circuit board assemblies acc. to EN 61086
- Military testing according to MIL-I-46058C, Amendment 7
- Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A

Yes; Class 2 for high availability

Yes; Discoloration of coating possible during service life

Yes; Conformal coating, Class A

#### Dimensions

Width	15 mm
Height	73 mm
Depth	58 mm

#### Weights

Weight, approx. 30 g

**last modified:** 11/29/2018