

Overview



Digital fail-safe digital output module:
F-DQ 8x24VDC 2A PPM PROFISAFE

Important properties:

- 8-channel digital fail-safe output module for ET 200MP/S7-1500
- Fail-safe 2-channel activation (parameterizable PM/PP switching) of actuators
- Actuators can be controlled up to 2 A
- Certified up to SIL 3 (IEC 61508), PL e (ISO 13849)
- LED display for error, operation, supply voltage and status
- Clear module labeling
 - Plain text identification of the module type
 - Complete Article No.
 - 2D matrix code (article and serial number)
 - Connection diagram
 - Hardware and firmware version
- Optional labeling accessories
 - Labeling sheets, yellow
- The module supports PROFIsafe in both PROFIBUS and PROFINET configurations.
- Can be used with all fail-safe SIMATIC S7-1500 F-CPU's in the central configuration, as well as ET 200MP distributed I/O with all other SIMATIC S7 F-CPU's.

Technical specifications

Article number	6ES7526-2BF00-0AB0 ET 200MP, F-DQ 8X24VDC 2A PPM
General information	
Product type designation	F-DQ 8x24VDC/2A PPM
Product function	
• I&M data	Yes; I&M0 to I&M3
Engineering with	
• STEP 7 TIA Portal configurable/ integrated as of version	V13 SP1 with HSP0086
Operating mode	
• DQ	Yes
Supply voltage	
Type of supply voltage	24 V DC
Rated value (DC)	24 V
Reverse polarity protection	Yes
Digital outputs	
Number of digital outputs	8
Current-sinking	Yes
Current-sourcing	Yes
Short-circuit protection	Yes
Open-circuit detection	Yes
Overload protection	Yes
Limitation of inductive shutdown voltage to	PM-switching: -24 V + (-47 V), PP-switching: -24 V
Switching capacity of the outputs	
• with resistive load, max.	2 A
• on lamp load, max.	10 W
Load resistance range	
• lower limit	12 Ω
• upper limit	2 000 Ω
Output voltage	
• Type of output voltage	DC
• for signal "1", min.	24 V; L+ (-0.5 V)
Output current	
• for signal "1" rated value	2 A
• for signal "0" residual current, max.	0.5 mA; Current-sourcing, or current sourcing and sinking switches individually, current sinking: max. 1 mA
Switching frequency	
• with resistive load, max.	30 Hz
• with inductive load, max.	0.1 Hz
• on lamp load, max.	10 Hz
Total current of the outputs	
• Current per channel, max.	2 A
Total current of the outputs (per module)	
horizontal installation	
- up to 40 °C, max.	16 A
- up to 60 °C, max.	8 A
vertical installation	
- up to 40 °C, max.	8 A
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	500 m

SIMATIC S7-1500 Advanced Controllers

I/O modules

F digital/analog modules

F digital output modules

Technical specifications (continued)

Article number	6ES7526-2BF00-0AB0 ET 200MP, F-DQ 8X24VDC 2A PPM
Interrupts/diagnostics/ status information	
Diagnostics function	Yes
Substitute values connectable	No
Alarms	
• Diagnostic alarm	Yes
Diagnostic messages	
• Monitoring the supply voltage	Yes
• Wire-break	Yes
• Short-circuit	Yes
• Group error	Yes
Diagnostics indication LED	
• RUN LED	Yes; Green LED
• ERROR LED	Yes; Red LED
• Monitoring of the supply voltage (PWR-LED)	Yes
• Channel status display	Yes; Green LED
• for channel diagnostics	Yes; Red LED
• for module diagnostics	Yes; Red LED
Potential separation	
Potential separation channels	
• between the channels and backplane bus	Yes
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 repair time of 100 hours)	
- Low demand mode: PFDavg in accordance with SIL3	< 6.00E-05
- High demand/continuous mode: PFH in accordance with SIL3	< 2.00E-09 1/h
Ambient conditions	
Ambient temperature during operation	
• horizontal installation, min.	0 °C
• horizontal installation, max.	60 °C
• vertical installation, min.	0 °C
• vertical installation, max.	40 °C
Dimensions	
Width	35 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	300 g

Ordering data

Article No.

F digital output module

8 outputs, 24 V DC, 2 A, PROFISAFE, p/m-switching

6ES7526-2BF00-0AB0

Accessories

Coding elements

E-coding element type F for ET 200 MP-module F-DI/F-DQ; 5 units, spare part

6ES7592-6EF00-1AA0

Front connectors

Incl. four potential bridges, cable ties and individual labeling strips, 40-pin

- Screw terminals
- Push-in

6ES7592-1AM00-0XB0
6ES7592-1BM00-0XB0

DIN A4 labeling sheets

For 35-mm F-modules; 10 sheets with 10 labeling strips each for I/O modules; perforated, yellow

6ES7592-2CX00-0AA0

U connector

5 units; spare part

6ES7590-0AA00-0AA0

Front door for F-I/O modules

5 front doors; with 5 labeling strips (front) and 5 cabling diagrams per front door; spare part

6ES7528-0AA10-7AA0

STEP 7 Safety Advanced V14 SP1

Task:

Engineering tool for configuring and programming fail-safe user programs for SIMATIC S7-1200 FC, S7-1500F, S7-1500F Software Controller, S7-300F, S7-400F, WinAC RTX F, ET 200SP F Controller and the fail-safe ET 200SP, ET 200S, ET 200M, ET 200iSP, ET 200pro and ET 200eco I/O

Requirement:

STEP 7 Professional V14 SP1

6ES7833-1FA14-0YA5

Floating license for 1 user, software and documentation on DVD; license key on USB flash drive

6ES7833-1FA14-0YH5Floating license for 1 user, software, documentation and license key for download¹⁾; email address required for delivery

S7 Distributed Safety V5.4 programming tool

Task:

Engineering tool for configuring fail-safe user programs for SIMATIC S7-300F, S7-400F, WinAC RTX F, ET 200S, ET 200MP, ET 200M, ET 200iSP, ET 200pro, ET 200eco

Requirement:

STEP 7 V5.3 SP3 and higher

6ES7833-1FC02-0YA5**6ES7833-1FC02-0YH5**Floating license for 1 user, license key download without software or documentation¹⁾; email address required for delivery

¹⁾ For up-to-date information and download availability, see: <http://www.siemens.com/tia-online-software-delivery>