

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS SIMATIC S7

6DL1136-6BA00-0PH1

DIGITAL INPUT AND OUTPUT MODULE

Used with the applicable SIMATIC ET 200SP HA configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Siemens official manufacturer documentation



SIMATIC ET 200SP HA, digital input module, safety-oriented F-DI 16x24VDC HA, SIL3 (IEC 61508), up to PL E (ISO 13849-1) suitable for terminal block H1, M1, color code CC01, channel diagnostics

General information	
Product type designation	F-DI 16x24VDC HA
Firmware version	V1.0
• FW update possible	Yes
Usable terminal block	TB type H1, M1, H0 and N0
Color code for module-specific color identification plate	CC01
Product function	
• I&M data	Yes; I&M0 to I&M3
Engineering with	
• STEP 7 configurable/integrated from version	V5.6 SP2 V9.0 SP3 (with S7 F Systems V6.3)
• PCS 7 configurable/integrated from version	V9.0 SP3 (with S7 F Systems V6.3)
• PROFINET from GSD version/GSD revision	GSDML V2.42 2023.01
Operating mode	
• DI	Yes
Redundancy	
• Redundancy capability	Yes; With TB type M1
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 (rated value)	80 mA
Current consumption, max.	150 mA
Encoder supply	
Number of outputs	16
24 V encoder supply	
• 24 V	Yes; Min. L+ (-1 V)
• Short-circuit protection	Yes; electronic (response threshold 0.7 A to 1.5 A; for IO redundancy up to 3 A). Ensure sufficient cable cross-section to attain the response threshold. Depending on the cable cross-section used, there may be constraints regarding the usable length of cable
• Output current per channel, max.	0.5 A
• Output current per module, max.	8 A
Power	
Power available from the backplane bus	90 mW
Power loss	
Power loss, typ.	3.2 W; All channels equipped with internal encoder supply and switch contacts, at rated voltage and ambient temperature
Address area	
Address space per module	

- Inputs - Outputs	9 byte 5 byte
Hardware configuration	
Automatic encoding	Yes
Digital inputs	
Number of digital inputs	16
Digital inputs, parameterizable	Yes
Source/sink input	Yes; P-reading
Input characteristic curve in accordance with IEC 61131, type 1	Yes
Input characteristic curve in accordance with IEC 61131, type 2	No
Input characteristic curve in accordance with IEC 61131, type 3	No
Pulse extension	Yes
Length	off, 50 ms, 100 ms, 200 ms, 500 ms, 1 s, 2 s
Time stamping	Yes; Resolution 10 ms
Signal change flutter	Yes
Flutter observation window	Yes
Input voltage	
- Rated value (DC) - for signal "0" - for signal "1"	24 V -30 to +5 V +15 to +30 V
Input current	
for signal "1", typ.	2.5 mA
Input delay (for rated value of input voltage)	
for standard inputs	
parameterizable	Yes
Cable length	
- shielded, max. - unshielded, max.	1 000 m 600 m
Encoder	
Connectable encoders	
2-wire sensor - permissible quiescent current (2-wire sensor), max.	Yes 1.5 mA
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Alarms	
- Diagnostic alarm - Maintenance interrupt	Yes Yes
Diagnoses	
- Diagnostic information readable - Monitoring the supply voltage - parameterizable - Monitoring of encoder power supply - Wire-break - Short-circuit to M	Yes Yes; Module-wise Yes Yes; channel by channel Yes; channel by channel, optional protective circuit for preventing wire-break diagnostics in the case of simple encoder contacts: 18 kOhm to 30 kOhm, typical 26 kOhm Yes; Encoder supply to M, channel by channel
Diagnostics indication LED	
- MAINT LED - Monitoring of the supply voltage (PWR-LED) - Channel status display - for channel diagnostics - for module diagnostics	Yes; Yellow LED Yes; green PWR LED Yes; green LED Yes; red LED Yes; green/red LED
Potential separation	
Potential separation channels	
- between the channels - between the channels and backplane bus - between the channels and the power supply of the electronics	No Yes No
Isolation	
Isolation tested with	1 500 V DC/1 min, type test
Standards, approvals, certificates	

Suitable for safety functions	Yes
Highest safety class achievable in safety mode	
• Performance level according to ISO 13849-1 • Category according to ISO 13849-1 • SIL acc. to IEC 61508	Up to PLe Cat. 4 Up to 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	< 3.00E-05
— High demand/continuous mode: PFH in accordance with SIL3	< 2.00E-09 1/h
Ambient conditions	
Ambient temperature during operation	
• horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max.	-40 °C 70 °C -40 °C 60 °C
Dimensions	
Width	22.5 mm
Height	115 mm
Depth	138 mm
Weights	
Weight, approx.	210 g

last modified: 3/12/2024 