

SIMATIC Compact Field Unit DIQ edition with 16x freely configurable DIQ installation (DI 24 V DC; DQ 24 V DC 0.5 A; counter) installation up to hazardous zone 2 channel diagnostics PROFINET interface, use of PROFINET BusAdapter Configuration in Run (CiR) media redundancy (MRP) PROFINET system redundancy (S2) temperature range -40 to +70 °C conformal coating mounting on 35 mm DIN rail



General information	
Product type designation	CFU DIQ
HW functional status	FS01
Firmware version	V2.0
• FW update possible	Yes
Vendor identification (VendorID)	002AH
Device identifier (DeviceID)	060FH
Number of channels	16
Product function	
• I&M data	Yes; I&M0 to I&M3
• Isochronous mode	No
• The user can configure digital channels as input/output as required	Yes
• Digital channels can be parameterized	Yes
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	V19 Update 2
• STEP 7 configurable/integrated from version	STEP 7 V5.7.1.4
• PCS 7 configurable/integrated from version	V9.1 SP2 UC7
• PROFIBUS from GSD version/GSD revision	- / -
• PROFINET from GSD version/GSD revision	GSDML V2.43 2024.02.08
Operating mode	
• DI	Yes
• Counter	Yes
• DQ	Yes
CiR - Configuration in RUN	
Reparameterization possible in RUN	Yes
Installation type/mounting	
Mounting	on 35 mm DIN rail, 2 spacing units wide
Mounting position	Horizontal, vertical
Supply voltage	
Type of supply voltage	24 V DC
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
Short-circuit protection	Yes
Redundant power supply	Yes
Mains buffering	
• Mains/voltage failure stored energy time	5 ms; For communication

Input current	
Current consumption (rated value)	5.12 A
Current consumption, max.	5.13 A
Inrush current, max.	4.8 A
I^2t	0.073 A ² ·s
Encoder supply	
Number of outputs	16
Output voltage, min.	18.2 V
Short-circuit protection	Yes; Electronic
Output current	
<ul style="list-style-type: none"> • up to 60 °C, max. 	5 A
<ul style="list-style-type: none"> • up to 70 °C, max. 	4 A
Power loss	
Power loss, typ.	2.88 W; Depending on the type of BusAdapter used (typ. RJ45)
Address area	
Address space per station	
<ul style="list-style-type: none"> • Address space per station, max. 	1 440 byte; Dependent on configuration
Digital inputs	
Number of digital inputs	16
Digital inputs, parameterizable	Yes
Sourcing/sinking 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	Yes
Pulse extension	No
Number of simultaneously controllable inputs	
horizontal installation	
<ul style="list-style-type: none"> — up to 60 °C, max. 	16; Total current must be observed, see DQ
<ul style="list-style-type: none"> — up to 70 °C, max. 	16; Total current must be observed, see DQ
vertical installation	
<ul style="list-style-type: none"> — up to 60 °C, max. 	16; Total current must be observed, see DQ
Digital input functions, parameterizable	
<ul style="list-style-type: none"> • Counter 	Yes
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — Number, max. 	2
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — Counting frequency, max. 	1 kHz
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — Counting width 	32 bit
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — Counting direction up/down 	Yes; Up
Input voltage	
<ul style="list-style-type: none"> • Rated value (DC) 	24 V
<ul style="list-style-type: none"> • for signal "0" 	-30 to +5 V
<ul style="list-style-type: none"> • for signal "1" 	+11 to +30V
Input current	
<ul style="list-style-type: none"> • for signal "1", typ. 	2.5 mA; Typical
Input delay (for rated value of input voltage)	
for standard inputs	
<ul style="list-style-type: none"> — parameterizable 	No
<ul style="list-style-type: none"> — at "0" to "1", max. 	3.2 ms; for counter function 0,1 ms
<ul style="list-style-type: none"> — at "1" to "0", max. 	3.2 ms; for counter function 0,1 ms
Cable length	
<ul style="list-style-type: none"> • shielded, max. 	1 000 m
<ul style="list-style-type: none"> • unshielded, max. 	600 m
Digital outputs	
Type of digital output	Transistor
Number of digital outputs	16
Current-sinking	No
Current-sourcing	Yes
Short-circuit protection	Yes
<ul style="list-style-type: none"> • Response threshold, typ. 	0.7 to 1.3 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 voltage	
• Type of output voltage	DC
• for signal "1", min.	Ue minus 1 V
Output current	
• for signal "1" rated value	0.5 A
• for signal "0" residual current, max.	0.1 mA
Output delay with resistive load	
• "0" to "1", max.	50 μs
• "1" to "0", max.	100 μs
Parallel switching of two outputs	
• for uprating	No
• for redundant control of a load	No
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
horizontal installation	
— up to 60 °C, max.	5 A
— up to 70 °C, max.	4 A
vertical installation	
— up to 60 °C, max.	5 A
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	600 m
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
— permissible quiescent current (2-wire sensor), max.	1.5 mA
Interfaces	
Number of PROFINET interfaces	1
Number of PROFIBUS interfaces	0
1. Interface	
Interface type	PROFINET
Isolated	Yes
Interface types	
• Number of ports	2; via BusAdapter
• integrated switch	Yes
• BusAdapter (PROFINET)	Yes
Protocols	
• PROFINET IO Device	Yes
• PROFIBUS DP device	No
• Media redundancy	Yes; as MRP client
Interface types	
RJ 45 (Ethernet)	
• 100 Mbps	Yes
• Autonegotiation	Yes
• Autocrossing	Yes
Protocols	
Supports protocol for PROFINET IO	Yes

PROFINET IO Device	
Services	
— Shared device	No
Redundancy mode	
• PROFINET system redundancy (S2)	Yes; Type S2
Media redundancy	
— MRP	Yes
Open IE communication	
• LLDP	Yes
Interrupts/diagnostics/status information	
Status indicator	Yes
Alarms	Yes
Diagnostics function	Yes
Alarms	
• Diagnostic alarm	Yes
• Maintenance interrupt	Yes
• Limit value alarm	Yes
• Hardware interrupt	Yes
Diagnoses	
• Monitoring the supply voltage	Yes
• Wire-break	Yes
• Short-circuit	Yes
Diagnostics indication LED	
• RUN LED	Yes; green LED
• ERROR LED	Yes; red LED
• MAINT LED	Yes; Yellow LED
• Monitoring of the supply voltage (PWR-LED)	Yes; green/red LED
• Channel status display	Yes; green/red LED
• Status indicator digital input (green)	Yes
• Status indicator digital output (green)	Yes
• Connection display LINK TX/RX	Yes; 2x green LEDs on BusAdapter
Potential separation	
between the channels and PROFINET	Yes
Potential separation digital inputs	
• between the channels	No
• between the channels and the power supply of the electronics	No
Potential separation digital outputs	
• between the channels	No
• between the channels and the power supply of the electronics	No
Isolation	
Isolation tested with	1 500 V AC between PROFINET and other electronics
Degree and class of protection	
IP degree of protection	IP20
Ambient conditions	
Ambient temperature during operation	
• min.	-40 °C
• max.	70 °C
• horizontal installation, min.	-40 °C
• horizontal installation, max.	70 °C; Observe derating
• vertical installation, min.	-40 °C
• vertical installation, max.	60 °C; Observe derating
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Relative humidity	
• Operation, max.	95 %
Connection method	

Design of electrical connection	Connection plug
Dimensions	
Width	329 mm
Height	123 mm
Depth	74 mm
Weights	
Weight, approx.	610 g
Classifications	

	Version	Classification
eClass	14	27-24-26-90
eClass	12	27-24-26-90
eClass	9.1	27-24-26-90
eClass	9	27-24-26-90
eClass	8	27-24-92-90
eClass	7.1	27-24-92-90
eClass	6	27-24-92-90
ETIM	10	EC002584
ETIM	9	EC002584
ETIM	8	EC002584
ETIM	7	EC002584

Approvals / Certificates

General Product Approval	EMV
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[Miscellaneous](#)



EG-Konf.



UL



RCM

For use in hazardous locations



ATEX

[Type Examination Certificate](#)

[FM](#)



IECEX



CCC



UL

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