

Siemens  
EcoTech



SIMATIC DP, Electronics module f. ET200SP, F-RQ 1x 24 V DC/24...230VAC/5A ST, 20 mm overall width, 1 relay output (2 NO) Summation output current 5 A, load voltage 24 V DC and 24...230 V AC, Can be used up to PL E (ISO 13849-1: 2008)/ SIL 3 (IEC 61508: 2010) if control takes place by (e.g. 6ES7136-6DB00-0CA0) F-DQ



### General information

Product type designation	F-RQ 24 ... 48VDC/24 ... 230VAC/5A ST
usable BaseUnits	BU type F0
Color code for module-specific color identification plate	CC42

Product function	
<ul style="list-style-type: none"> <li>I&amp;M data</li> </ul>	Yes; I&M0 to I&M3

Engineering with	
<ul style="list-style-type: none"> <li>STEP 7 TIA Portal configurable/integrated from version</li> <li>STEP 7 configurable/integrated from version</li> <li>PROFINET from GSD version/GSD revision</li> </ul>	V13 V5.5 SP4 and higher V2.31

Supply voltage	
Rated value (DC)	24 V; Coil voltage
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
power supply according to NEC Class 2 required	No

Power	
Power consumption from the backplane bus	100 mW

Power loss	
Power loss, typ.	1 W

Address area	
Address space per module	
<ul style="list-style-type: none"> <li>Inputs</li> </ul>	1 byte

Hardware configuration	
Automatic encoding	Yes
<ul style="list-style-type: none"> <li>Mechanical coding element</li> <li>Type of mechanical coding element</li> </ul>	Yes type C

Digital outputs	
Type of digital output	Relays
Number of digital outputs	1
Limitation of inductive shutdown voltage to	No
Controlling a digital input	Yes
Switching capacity of the outputs	
<ul style="list-style-type: none"> <li>with resistive load, max.</li> <li>on lamp load, max.</li> </ul>	5 A 25 W
Switching frequency	
<ul style="list-style-type: none"> <li>with resistive load, max.</li> <li>with inductive load, max.</li> </ul>	2 Hz 0.1 Hz; See data in manual

<ul style="list-style-type: none"> <li>with inductive load (acc. to IEC 60947-5-1, DC13), max.</li> </ul>	0.1 Hz
<ul style="list-style-type: none"> <li>with inductive load (acc. to IEC 60947-5-1, AC15), max.</li> </ul>	2 Hz
<b>Total current of the outputs (per module)</b>	
<b>horizontal installation</b>	
— up to 40 °C, max.	5 A; note derating data in the manual
— up to 50 °C, max.	4 A; note derating data in the manual
— up to 60 °C, max.	3 A; note derating data in the manual
<b>vertical installation</b>	
— up to 50 °C, max.	3 A; note derating data in the manual
<b>Relay outputs</b>	
<ul style="list-style-type: none"> <li>Number of relay outputs</li> </ul>	1; 2 NO contacts
<ul style="list-style-type: none"> <li>Rated supply voltage of relay coil L+ (DC)</li> </ul>	24 V
<ul style="list-style-type: none"> <li>Current consumption of relays (coil current of all relays), max.</li> </ul>	70 mA
<ul style="list-style-type: none"> <li>external protection for relay outputs</li> </ul>	yes; 6 A, see data in manual
<ul style="list-style-type: none"> <li>Relay approved acc. to UL 508</li> </ul>	Yes; Pilot Duty B300, R300
<b>Switching capacity of contacts</b>	
— with inductive load, max.	see additional description in the manual
— with resistive load, max.	see additional description in the manual
— Thermal continuous current, max.	5 A
— Switching current, min.	1 mA
— Switching current after exceeding 300 mA, min.	10 mA
— Switching current after exceeding 300 mA, max.	5 A
— Rated switching voltage (DC)	24 V
— Rated switching voltage (AC)	230 V
<b>Cable length</b>	
<ul style="list-style-type: none"> <li>shielded, max.</li> </ul>	500 m; for load contacts
<ul style="list-style-type: none"> <li>unshielded, max.</li> </ul>	300 m; for load contacts
<ul style="list-style-type: none"> <li>Control cable (input), max.</li> </ul>	10 m
<b>Interrupts/diagnostics/status information</b>	
Diagnostics function	Yes
<b>Diagnostics indication LED</b>	
<ul style="list-style-type: none"> <li>RUN LED</li> </ul>	Yes; green/red DIAG LED
<ul style="list-style-type: none"> <li>Channel status display</li> </ul>	Yes; green LED
<b>Potential separation</b>	
<b>Potential separation channels</b>	
<ul style="list-style-type: none"> <li>between the channels</li> </ul>	Yes; for SELV / PELV only
<ul style="list-style-type: none"> <li>between the channels and backplane bus</li> </ul>	Yes
<ul style="list-style-type: none"> <li>between the channels and the power supply of the electronics</li> </ul>	Yes
<b>Permissible potential difference</b>	
between channels and backplane bus/supply voltage	250 V AC (reinforced insulation)
<b>Isolation</b>	
Isolation tested with	2 545 V DC/2 s (routine test)
<b>tested with</b>	
<ul style="list-style-type: none"> <li>between channels and backplane bus/supply voltage</li> </ul>	DC 2 545 V 2 s (routine test), impulse voltage test DC 7 200 V / 5 positive and 5 negative pulses (type test)
<ul style="list-style-type: none"> <li>between backplane bus and supply voltage</li> </ul>	707 V DC (type test)
<b>Standards, approvals, certificates</b>	
Siemens Eco Profile (SEP)	Siemens EcoTech
Suitable for safety functions	Yes
<b>Ecological footprint</b>	
<ul style="list-style-type: none"> <li>environmental product declaration</li> </ul>	Yes
<b>Global warming potential</b>	
— global warming potential, (total) [CO2 eq]	52 kg
— global warming potential, (during production) [CO2 eq]	6.8 kg
— global warming potential, (during operation) [CO2 eq]	45.8 kg
— global warming potential, (after end of life cycle) [CO2 eq]	-0.628 kg
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

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SIL 3

Probability of failure (for service life of 20 years and repair time of 100 hours)

- Low demand mode: PFDavg in accordance with SIL2 < 1.00E-04, function test 1x per year
- Low demand mode: PFDavg in accordance with SIL3 < 1.00E-05, function test 1x per month
- High demand/continuous mode: PFH in accordance with SIL2 < 1.00E-08 1/h, function test 1x per year
- High demand/continuous mode: PFH in accordance with SIL3 < 6.00E-09 1/h, function test 1x per month

**Ambient conditions**

Ambient temperature during operation

- horizontal installation, min. 0 °C
- horizontal installation, max. 60 °C
- vertical installation, min. 0 °C
- vertical installation, max. 50 °C

**Dimensions**

Width	20 mm
Height	73 mm
Depth	58 mm

**Weights**

Weight, approx.	56 g
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**Classifications**

	Version	Classification
eClass	14	27-24-26-04
eClass	12	27-24-26-04
eClass	9.1	27-24-26-04
eClass	9	27-24-26-04
eClass	8	27-24-26-04
eClass	7.1	27-24-26-04
eClass	6	27-24-26-04
ETIM	9	EC001599
ETIM	8	EC001599
ETIM	7	EC001599
IDEA	4	3566
UNSPSC	15	32-15-17-05

**Approvals / Certificates**

General Product Approval



[Miscellaneous](#)

[Manufacturer Declaration](#)



For use in hazardous locations

Functional Safety

Maritime application



[FM](#)



[Type Examination Certificate](#)



Maritime application



[NK / Nippon Kaiji Kyokai](#)



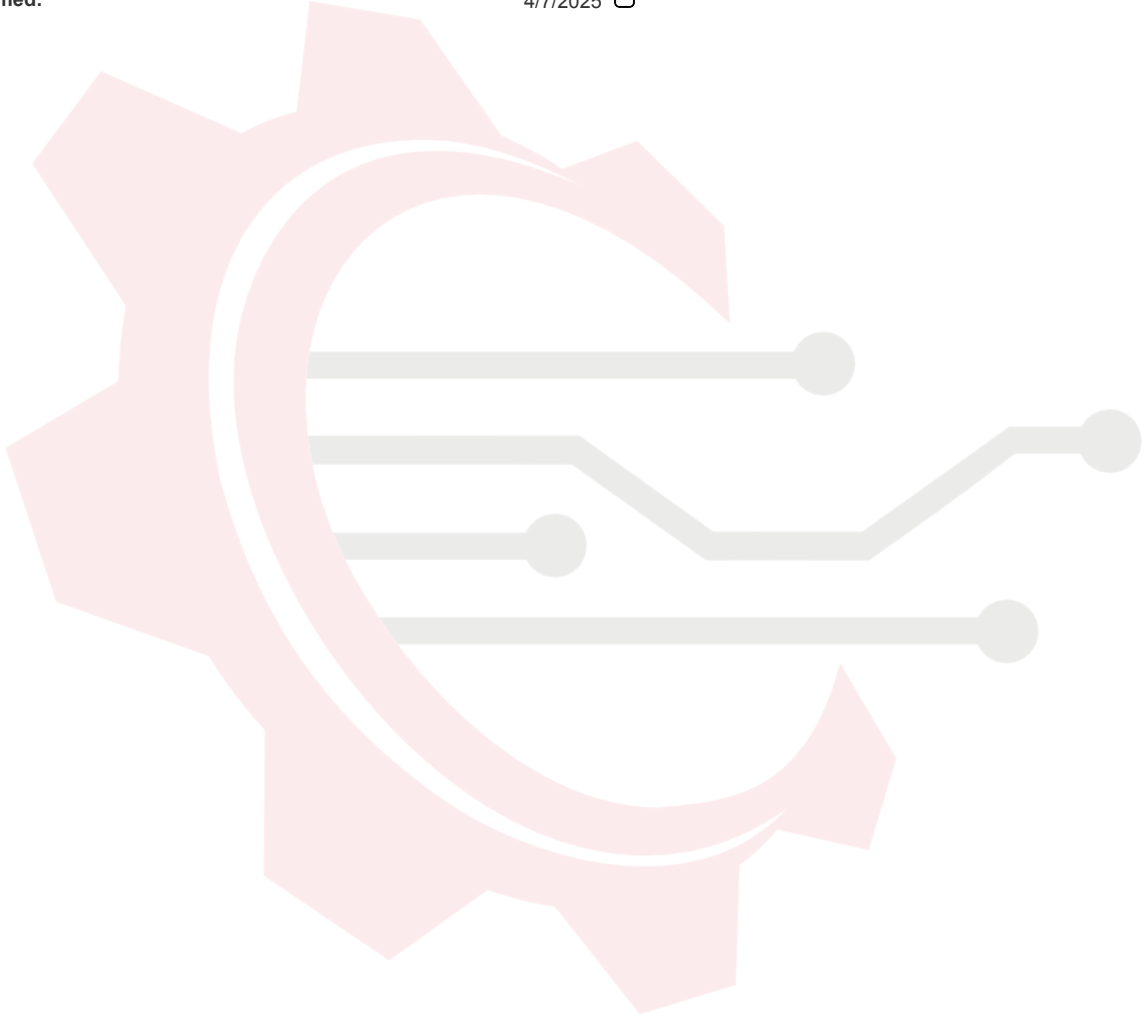
[CCS \(China Classification Society\)](#)





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