

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	
• I&M data	Yes; I&M0 to I&M3
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	V13
• STEP 7 configurable/integrated from version	V5.5 SP4 and higher
• PROFINET from GSD version/GSD revision	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
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Power loss

Power loss, typ.	1 W
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Address area

Address space per module	
• Inputs	1 byte

Hardware configuration

Automatic encoding	Yes
• Mechanical coding element	Yes
• Type of mechanical coding element	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	
• with resistive load, max.	5 A
• on lamp load, max.	25 W
Switching frequency	
• with resistive load, max.	2 Hz
• with inductive load, max.	0.1 Hz; See data in manual

• with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max.	0.1 Hz 2 Hz
Total current of the outputs (per module)	
horizontal installation	
— 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
vertical installation	
— up to 50 °C, max.	3 A; note derating data in the manual
Relay outputs	
• Number of relay outputs • Rated supply voltage of relay coil L+ (DC) • Current consumption of relays (coil current of all relays), max. • external protection for relay outputs • Relay approved acc. to UL 508	1; 2 NO contacts 24 V 70 mA yes; 6 A, see data in manual Yes; Pilot Duty B300, R300
Switching capacity of contacts	
— 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
Cable length	
• shielded, max. • unshielded, max. • Control cable (input), max.	500 m; for load contacts 300 m; for load contacts 10 m
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Diagnostics indication LED	
• RUN LED • Channel status display	Yes; green/red DIAG LED Yes; green 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	Yes; for SELV / PELV only Yes Yes
Permissible potential difference	
between channels and backplane bus/supply voltage	250 V AC (reinforced insulation)
Isolation	
Isolation tested with	2 545 V DC/2 s (routine test)
Overvoltage category	III (according to IEC/EN 61131-2:2007 and EN 298:2012), II (according to IEC 61131-2:2017 and IEC 61010-2-201)
tested with	
• between channels and backplane bus/supply voltage • between backplane bus and supply voltage	DC 2 545 V 2 s (routine test), impulse voltage test DC 7 200 V / 5 positive and 5 negative pulses (type test) 707 V DC (type test)
Standards, approvals, certificates	
Siemens Eco Profile (SEP)	Siemens EcoTech
Suitable for safety functions	Yes
Ecological footprint	
• environmental product declaration	Yes
Global warming potential	
— 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)	-0.628 kg

[CO2 eq]																																								
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	PLe 4 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. • horizontal installation, max. • vertical installation, min. • vertical installation, max.	0 °C 60 °C 0 °C 50 °C																																							
Dimensions																																								
Width	20 mm																																							
Height	73 mm																																							
Depth	58 mm																																							
Weights																																								
Weight, approx.	56 g																																							
Classifications																																								
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