SIEMENS

Data sheet



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

Product type designation usable BaseUnits BU type F0 Color code for module-specific color identification plate Product function • I&M data Engineering with • STEP 7 TIA Potal configurable/integrated from version • STEP 7 TOR Potal configurable/integrated from version • PROFINET from GSD version/GSD revision V2.31 Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) power supply according to NEC Class 2 required No Power loss Power loss Power loss Power loss, typ. 100 mW Address area Address space per module • Inputs 1 byte Hardware configuration Automatic encoding Automatic encoding Yes • Mechanical coding element • Yes • Type of mechanical coding element yee C Digital outputs Intelligation of inductive shutdown voltage to Controlling a digital output • with resistive load, max. • on lamp load, max. • with resistive load, max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC15), max. • with inductive load (acc. to IEC 60947-5-1, DC15), max. • with inductive load (acc. to IEC 60947-5-1, DC15), max. • with inductive load (acc. to IEC 60947-5-1, DC15), max. • with inductive load (acc. to IEC 60947-5-1, DC15), max. • with inductive load (acc. to IEC 60947-5-1, DC15), max. • with inductive load (acc. to IEC 60947-5-1, DC15), max. • with inductive load (acc. to IEC 60947-5-1, DC15), max. • With resistive load (acc. to IEC 60947-5-1, DC15), max. • With resistive load (acc.	General information		
Color code for module-specific color identification plate Product function • I&M data Engineering with • STEP 7 TIA Portal configurable/integrated from version • PROFINET from GSD version/SSD revision • PROFINET from GSD version/SSD revision Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, lower limit (DC) power supply according to NEC Class 2 required Power available from the backplane bus Power loss Power loss Address space per module • Inputs • I byte Hardware configuration Automatic encoding • Mechanical coding element • Type of mechanical coding element • Type of digital output Type of digital output Limitation of inductive shutdown voltage to on lamp load, max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max.	Product type designation	F-RQ 24 48VDC/24 230VAC/5A ST	
Product function • I&M data Engineering with • STEP 7 TIA Portal configurable/integrated from version • STEP 7 configurable/integrated from version • V2.31 Supply voltage Rated value (DC) • 24 V: Coil voltage permissible range, lower limit (DC) • 28.8 V power supply according to NEC Class 2 required No Power Power Power voltage from the backplane bus 100 mW Power loss Power loss, tp. Address space per module • Inputs • I byte Hardware configuration Automatic encoding • Yes • Mechanical coding element • Type of mechanical coding element • Type of digital output Number of digital output Relays Number of digital outputs 1 Limitation of inductive shutdown voltage to Controlling a digital input Yes Switching geapacity of the outputs • with resistive load, max. • on lamp load, max. • With inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max.	usable BaseUnits	BU type F0	
• I8M data Egineering with • STEP 7 TIAP Portal configurable/integrated from version • STEP 7 TIAP Portal configurable/integrated from version • STEP 7 configurable/integrated from version • PROFINET from GSD version/GSD revision Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) power supply according to NEC Class 2 required No Power Power available from the backplane bus 100 mW Power loss, typ. 1 W Address area Address space per module • Inputs 1 byte Hardware configuration Automatic encoding • Mechanical coding element • Yes • Type of mechanical coding element Type of digital outputs Type of digital outputs No Controlling a digital input • with inductive load, max. • with inductive load, anx. • with inductive load, anx. • with inductive load, anx. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max.	Color code for module-specific color identification plate	CC42	
Engineering with STEP 7 TIA Portal configurable/integrated from version STEP 7 configurable/integrated from version PROFINET from GSD version/GSD revision V2.31 Supply voltage Rated value (DC) Permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) power supply according to NEC class 2 required No Power Power available from the backplane bus 100 mW Power loss, typ. 1 W Address area Address space per module Inputs 1 byte Hardware configuration Automatic encoding Nechanical coding element Yes Nechanical coding element Yes Type of digital output Relays Number of digital output Limitation of inductive shutdown voltage to Controlling a digital input Yes Switching capacity of the outputs • with resistive load, max. • on lamp load, max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • With inductive load (acc. to IEC 60947-5-1, DC13), max. • With inductive load (acc. to IEC 60947-5-1, DC13), max. • With inductive load (acc. to IEC 60947-5-1, DC13), max. • With inductive load (acc. to IEC 60947-5-1, DC13), max.	Product function		
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PROFINET from GSD version/GSD revision Supply voltage Rated value (DC)	 STEP 7 TIA Portal configurable/integrated from version 	V13	
Rated value (DC) 24 V; Coil voltage permissible range, lower limit (DC) 20.4 V permissible range, uper limit (DC) 28.8 V power supply according to NEC class 2 required No Power Power available from the backplane bus 100 mW Power loss, typ. 1 W Address area Address area Address space per module • Inputs 1 byte Hardware configuration Automatic encoding Yes • Mechanical coding element Yes • Type of mechanical coding element bype C Digital outputs Type of digital output Relays Number of digital output Number of inductive shutdown voltage to No Controlling a digital input Yes Switching capacity of the outputs • with resistive load, max. 25 W Switching frequency • with resistive load, max. 25 W • with inductive load, max. 0.1 Hz; See data in manual • with inductive load (acc. to IEC 60947-5-1, DC13), max. 0.1 Hz • with inductive load (acc. to IEC 60947-5-1, DC13), max. 0.1 Hz • with inductive load (acc. to IEC 60947-5-1, DC13), max. 0.1 Hz • with inductive load (acc. to IEC 60947-5-1, DC13), max. 0.1 Hz • with inductive load (acc. to IEC 60947-5-1, DC13), max. 0.1 Hz • with inductive load (acc. to IEC 60947-5-1, DC13), max. 0.1 Hz	 STEP 7 configurable/integrated from version 	V5.5 SP4 and higher	
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power supply according to NEC Class 2 required Power I Power loss Power loss Power loss Power loss, typ. Address area Address space per module Inputs I byte Hardware configuration Automatic encoding Mechanical coding element Yes Mechanical coding element Type of mechanical coding element Type of digital outputs Type of digital output Number of digital output Number of digital input Switching agaacity of the outputs with resistive load, max. on lamp load, max. with inductive load (acc. to IEC 60947-5-1, DC13), max. with inductive load (acc. to IEC 60947-5-1, AC15), max. 100 mW Power Loss 100 mW Power Lo	permissible range, lower limit (DC)	20.4 V	
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Automatic encoding • Mechanical coding element • 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 Controlling a digital input Switching capacity of the outputs • with resistive load, max. • on lamp load, max. • with resistive load, max. • with inductive load, max. • with inductive load, max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max.	• Inputs	1 byte	
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Type of digital outputs Type of digital outputs Number of digital outputs Limitation of inductive shutdown voltage to Controlling a digital input Switching capacity of the outputs • with resistive load, max. • on lamp load, max. Switching frequency • with resistive load, max. • with resistive load, max. • with resistive load, max. • with inductive load, max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. 2 Hz	Mechanical coding element	Yes	
Type of digital outputs Number of digital outputs Limitation of inductive shutdown voltage to Controlling a digital input Switching capacity of the outputs • with resistive load, max. • on lamp load, max. Switching frequency • with resistive load, max. • with inductive load, max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. 2 Hz	 Type of mechanical coding element 	type C	
Number of digital outputs Limitation of inductive shutdown voltage to Controlling a digital input Yes Switching capacity of the outputs • with resistive load, max. • on lamp load, max. Switching frequency • with resistive load, max. • with inductive load, max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • With inductive load (acc. to IEC 60947-5-1, AC15), max.	Digital outputs		
Limitation of inductive shutdown voltage to Controlling a digital input Switching capacity of the outputs with resistive load, max. on lamp load, max. Switching frequency with resistive load, max. 2 Hz with inductive load, max. understand the sistive load in manual with inductive load (acc. to IEC 60947-5-1, DC13), max. with inductive load (acc. to IEC 60947-5-1, AC15), max. with inductive load (acc. to IEC 60947-5-1, AC15), max. With inductive load (acc. to IEC 60947-5-1, AC15), max. with inductive load (acc. to IEC 60947-5-1, AC15), max.	Type of digital output	Relays	
Controlling a digital input Switching capacity of the outputs • with resistive load, max. • on lamp load, max. Switching frequency • with resistive load, max. • with inductive load, max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • With inductive load (acc. to IEC 60947-5-1, AC15), max. • With inductive load (acc. to IEC 60947-5-1, AC15), max.	Number of digital outputs	1	
Switching capacity of the outputs • with resistive load, max. • on lamp load, max. Switching frequency • with resistive load, max. • with inductive load, max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max.	Limitation of inductive shutdown voltage to	No	
 with resistive load, max. on lamp load, max. Switching frequency with resistive load, max. with inductive load, max. with inductive load (acc. to IEC 60947-5-1, DC13), max. with inductive load (acc. to IEC 60947-5-1, AC15), max. With inductive load (acc. to IEC 60947-5-1, AC15), max. 	Controlling a digital input	Yes	
 on lamp load, max. Switching frequency with resistive load, max. with inductive load, max. with inductive load (acc. to IEC 60947-5-1, DC13), max. with inductive load (acc. to IEC 60947-5-1, AC15), max. 2 Hz with inductive load (acc. to IEC 60947-5-1, AC15), max. 2 Hz 	Switching capacity of the outputs		
Switching frequency • with resistive load, max. • with inductive load, max. • with inductive load (acc. to IEC 60947-5-1, DC13), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • With inductive load (acc. to IEC 60947-5-1, AC15), max.	 with resistive load, max. 	5 A	
 with resistive load, max. with inductive load, max. with inductive load (acc. to IEC 60947-5-1, DC13), max. with inductive load (acc. to IEC 60947-5-1, AC15), max. With inductive load (acc. to IEC 60947-5-1, AC15), max. 	on lamp load, max.	25 W	
 with inductive load, max. with inductive load (acc. to IEC 60947-5-1, DC13), max. with inductive load (acc. to IEC 60947-5-1, AC15), max. 2 Hz 	Switching frequency		
 with inductive load (acc. to IEC 60947-5-1, DC13), max. with inductive load (acc. to IEC 60947-5-1, AC15), max. 2 Hz 	 with resistive load, max. 	2 Hz	
• with inductive load (acc. to IEC 60947-5-1, AC15), 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.	0.1 Hz	
Total current of the outputs (per module)	• with inductive load (acc. to IEC 60947-5-1, AC15), max.	2 Hz	
the thirty of the models	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	1; 2 NO contacts
Rated supply voltage of relay coil L+ (DC)	24 V
 Current consumption of relays (coil current of all relays), max. 	70 mA
 external protection for relay outputs 	yes; 6 A, see data in manual
Relay approved acc. to UL 508	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.	500 m; for load contacts
• unshielded, max.	300 m; for load contacts
Control cable (input), max.	10 m
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Diagnostics indication LED	
• RUN LED	Yes; green/red DIAG LED
Channel status display	Yes; green LED
Potential separation	
Potential separation channels	
 between the channels 	Yes; for SELV / PELV only
 between the channels and backplane bus 	Yes
 between the channels and the power supply of the electronics 	Yes
Permissible potential difference	
	250 V AC (vainfavand insulation)
between channels and backplane bus/supply voltage	250 V AC (reinforced insulation)
Isolation	0.545.VD0/0///
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	DC 2 545 V 2 s (routine test), impulse voltage test DC 7 200 V / 5 positive and
,	5 negative pulses (type test)
between backplane bus and supply voltage	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
 Category according to ISO 13849-1 	4
• 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 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	

last modified: 3/12/2024 **C**

