

Interface Converters

3RS17 interface converters

Technical specifications

Type 3RS17			24 V AC/DC	24 ... 240 V AC/DC
General data				
Supply voltage operating range	DC		0.7 ... 1.25 x U_n	0.7 ... 1.1 x U_n
	AC		0.8 ... 1.2 x U_n	0.8 ... 1.1 x U_n
Rated power		W	Typically 0.3	Typically 0.75
Electrical isolation of input/output			Active disconnecter: 1500 V, 50 Hz, 1 min; Passive disconnecter: 500 V, 50 Hz, 1 min	4000 V, 50 Hz, 1 min
Rated insulation voltage U_i Degree of pollution 2 Overvoltage category III acc. to DIN VDE 0100		V	50	300
Ambient temperature	During operation	°C	-25 ... +60	
	During storage	°C	-40 ... +85	
Connection type			Screw terminals	
• Terminal screw • Solid • Finely stranded with end sleeve • AWG cables, solid or stranded • Tightening torque		mm ² mm ² AWG Nm	M3 (for standard screw driver size 2 and Pozidriv 2) 1 x (0.5 ... 4) / 2 x (0.5 ... 2.5) 1 x (0.5 ... 2.5) / 2 x (0.5 ... 1.5) 2 x (20 ... 14) 0.8 ... 1.2	
Connection type			Spring-loaded terminals	
• Solid • Finely stranded, with end sleeves acc. to DIN 46228 • Finely stranded • AWG cables, solid or stranded	Enclosures IEC 529 Terminals IEC 529	mm ² mm ² mm ² AWG	2 x (0.25 ... 1.5) 2 x (0.25 ... 1.5) 2 x (0.25 ... 1.5) 2 x (24 ... 16)	
Vibration resistance acc. to IEC 68-2-6			10 ... 55 Hz: 0.35 mm	
Shock resistance acc. to IEC 68-2-27			15/11	
Input				
Impedance	Voltage inputs	kΩ	330	
	Current inputs, active	Ω	100	
Input voltage max.	Voltage inputs	V	30 AC/DC	
	Current inputs, active	V	30 AC/DC	
Operating current	Current inputs, passive	μA	100/250 (6.2 mm width)	
Voltage drop	Current inputs, passive	V	2.7 at 20 mA	
Output				
Internal resistance	Voltage output, 0 ... 10 V	Ω	55	
Output load	Current 0/4 ... 20 mA active, max.	Ω	400	
	Current 0 ... 20 mA passive, max.	Ω	1000 at 20 mA	
	Frequency, min.	Ω	2400	
Output voltage	Frequency	V	20.9	
Output current	Voltage output, 0 ... 10 V, max.	mA	21; note the terminating resistance (> 500 Ω)!	
	Frequency, max.	mA	10	
Short-circuit current	Voltage output, 0 ... 10 V	mA	40	
	Current output, 0 ... 20 mA, passive	mA	Corresponds to the input current	
	Frequency	mA	15	
Protection of the outputs			Short-circuit resistant	
Max. overvoltage at output		V	30	
Accuracy				
Total error at 23 °C	Active disconnecter (frequency)	%	0.1	
	Active disconnecter (U, I)	%	0.1 ¹⁾	
Linearity error	Active disconnecter (U, I)	%	0.02	
	Active disconnecter (frequency)	%	0.02	
Deviation due to ambient temperature	Active disconnecter (frequency)		0 ... 50 Hz: 7.5 mHz/K; 0 ... 100 Hz: 15 mHz/K; 0 ... 1 kHz: 0.15 Hz/K;	
	Active disconnecter (U, I)		0 ... 10 kHz: 1.5 Hz/K	
	Passive disconnecter		0 ... 10 V: 1.5 mV/K; 0/4 ... 20 mA: 3 μA/K With load < 600 Ω: < 100 ppm/K of measured value with load ≥ 600 Ω: < 175 ppm/K of measured value	
Transmission error	Passive disconnecter	%	0.1	
Measured value load error		%/Ω	0.06/100	
Limit frequency at 3 dB	Active disconnecter (frequency)	Hz	30	
	Active disconnecter (U, I)	Hz	30	
	Passive disconnecter	Hz	50	
Rise time (10 ... 90 %)	Active disconnecter (frequency)		10 + 1 period	
	Active disconnecter (U, I)	ms	10	
Settling time at 1 % accuracy	Active disconnecter (frequency)		30 + 1 period	
	Active disconnecter (U, I)	ms	30	
Residual ripple	Active disconnecter (U, I)	mV _{eff}	< 5	
	Passive disconnecter	mV _{eff}	< 8	

The accuracy refers to the upper limit of effective range if not otherwise stated.

¹⁾ For 3RS17 06: 0.1 % for selected output 4... 20 mA; 0.3 % for selected output 0 ... 20 mA; 0.3 % for selected output 0 ... 10 V and from an input voltage > 50 mV.
For an input voltage < 50 mV an offset of max. 20 ms is effective at the output.