

Relays

Mini relays FA4

Characteristic quantities		
Rated voltage	U_N	12 V
Release voltage	U_{12r}	$\geq 2,1$ V (23 °C)
Test voltage	U_P	500 V _{-eff}
Sustained thermal load	P_{ϑ}	3,3 W
Upper limit temperature	ϑ_{max}	155 °C
Thermal resistance	R_{ϑ}	40 K/W
Ambient temperature	ϑ_{amb}	-40 °C...+85 °C
Max. switching frequency	f_{Smax}	20 Hz
Release time (typ.)	t_r	5,5 ms
Graphical symbol	See connection diagram	

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NO relays

BOSCH
Part number Tyco
Ford-Part number

0 986 332 050
V23136-J0004-X031
01030359

Technical data for contact side

Contact material		AgSnO ₂
Minimum recommended current	I_{Smin} ($U_s = 13,5$ V)	1 A
Max. switching current ²⁾ - Make	I_{Smax} on ³⁾ / off	240 A / 70 A
Limiting continuous current - Make	I_{SN} at 23 °C / 85 °C	70 A / 50 A
Voltage drop - Break (typ.)	10 A contact current	20 mV
Increase in coil temperature (typ.)	10 A contact current	2 K
Mechanical endurance (without load)		> 1 x 10 ⁷ cycles
Electrical endurance ⁴⁾	70 A resistive load	> 1 x 10 ⁵ cycles

²⁾ The values apply to a resistive or inductive load with suitable spark suppression. ³⁾ This current may flow for a maximum of 3 s for a make / break ratio of 1:10.

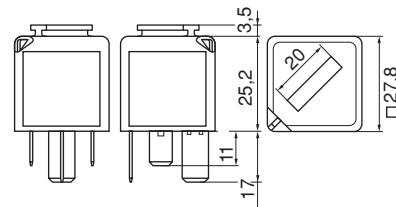
⁴⁾ for a resistive load, 1 s/1, $U_s = 13.5$ V load voltage.

Technical data for energizing side

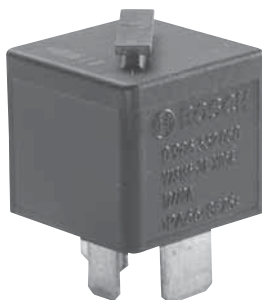
Operate voltage ¹⁾	U_{12op}	≤ 7,2 V
Coil resistance	R_{Cu}	90 Ω±0 Ω
Parallel resistor	R_P	560 Ω
Total resistance	R_{12}	78 Ω±8 Ω
Nom. power consumption	P_N	1,8 W
Operate time (typ.)	t_{OP}	8,5 ms

¹⁾ At 23 °C winding temperature.

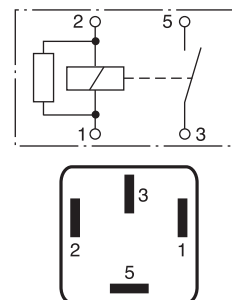
Dimensional drawing



Figure



Connection diagram



Relays

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Change-over relay

BOSCH
Part number Tyco
Ford-Part number

0 986 332 053
V23136-A0001-X032
01030360

Technical data for contact side			
Contact material		Ag	
Minimum recommended current	I_{Smin} ($U_s = 13,5\text{ V}$)	1 A	
Max. switching current ²⁾ - Break	I_{Smax} on ³⁾ / off	45 A / 40 A	
Max. switching current ²⁾ - Make	I_{Smax} on ³⁾ / off	120 A / 60 A	
Limiting continuous current - Break	I_{SN} bei 20 °C / 85 °C	40 A / 30 A	
Limiting continuous current - Make	I_{SN} at 23 °C / 85 °C	60 A / 40 A	
Voltage drop - Break (typ.)	10 A contact current	100 mV	
Voltage drop - Break (typ.)	10 A contact current	100 mV	
Increase in coil temperature (typ.)	10 A contact current	3 K	
Mechanical endurance (without load)		> 1 x 10 ⁷ cycles	
Electrical endurance ⁴⁾	40 A resistive load	> 1 x 10 ⁵ cycles	

²⁾ The values apply to a resistive or inductive load with suitable spark suppression. ³⁾ This current may flow for a maximum of 3 s for a make / break ratio of 1:10.
⁴⁾ $U_s = 13.5\text{ V}$ load voltage.

Technical data for energizing side			
Operate voltage ¹⁾	U_{12op}	≤ 7,2 V	
Coil resistance	R_{Cu}	114 Ω	
Parallel resistor	R_P	680 Ω	
Total resistance	R_{12}	98 Ω±10 Ω	
Nom. power consumption	P_N	1,5 W	
Operate time (typ.)	t_{OP}	8,5 ms	

¹⁾ At 23 °C winding temperature.

